THE

McGILL

University Calendar,

AND

EXAMINATION PAPERS,

1884-85.

CORRECTED TO JUNE, 1884.



Montreal:
PRINTED FOR THE UNIVERSITY BY JOHN LOVELL & SON,
St. Nicholas Street,
1884.

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ANNUAL CALENDAR

OF

McGILL COLLEGE

AND

UNIVERSITY,

MONTREAL.

FOUNDED UNDER BEQUEST OF THE HON. JAMES McGILL,
ERECTED INTO A UNIVERSITY BY ROYAL CHARTER
IN 1821; AND RE-ORGANIZED BY AN
AMENDED CHARTER IN 1852.

SESSION 1884-85.

Montreal:
PRINTED FOR THE UNIVERSITY BY JOHN LOVELL & SON.

1884.

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1884-85
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The *University Lists* of Graduates, Students, &c., will be found in the complete Calendar, which can be had on application to the Secretary.

The *Examination Papers* of the Session 1883-84 are published separately, and may be purchased of the Secretary, or through booksellers.

Governing Body of the University.

VISITOR:

HIS EXCELLENCY THE RIGHT HON. THE MARQUIS OF LANSDOWNE, G.C.M.G.,
GOVERNOR GENERAL OF CANADA, &C.

GOVERNORS:

[*Being the Members of the Royal Institution for the advancement of learning.*]

THE HON. JAMES FERRIER, SENATOR, M.L.C.
PETER REDPATH, ESQ.
JOHN H. R. MOLSON, ESQ.
THE HON. FREDERICK W. TORRANCE, M.A., B.C.L.
THE HON. SIR ALEXANDER T. GALT, K.C.M.G.
THE HON. SIR FRANCIS HINCKS, K.C.M.G., C.B.
JOHN MOLSON, ESQ.
JOSEPH HICKSON, ESQ.
THE HON. ROBERT MACKAY.
THE HON. JOHN J. C. ABBOTT, D.C.L., Q.C.
ROBERT A. RAMSAY, M.A., B.C.L.
WILLIAM C. McDONALD, ESQ.
HUGH McLENNAN, ESQ.
GEORGE HAGUE, ESQ.

The Board of Governors has, under the Royal Charter, the power to frame Statutes, to make Appointments, and to administer the Finances of the University.)

PRINCIPAL:—

JOHN W. DAWSON, M.A., LL.D., F.R.S., C.M.G., *Vice-Chancellor.*

(The Principal has, under the Statutes, the general superintendence of all affairs of the College and University, under such regulations as may be in force.)

FELLOWS:

VEN. ARCHDEACON LEACH, M.A., D.C.L., LL.D., Vice-Principal and Dean of the Faculty of Arts.

HENRY ASPINWALL HOWE, LL.D., Governors' Fellow.

34379

Rev. JOHN COOK, D.D., Principal of Morrin College, Quebec.

ALEXANDER JOHNSON, M.A., LL.D., Vice-Dean of the Faculty of Arts, Governors' Fellow.

Rev. GEORGE CORNISH, M.A., LL.D., Elective Fellow, Faculty of Arts.

Rev. HENRY WILKES, M.A., D.D., LL.D., Professor of Theology, Congregational College of British North America.

Rev. D. H. MacVICAR, LL.D., Principal of the Presbyterian College of Montreal.

J. J. McLAREN, M.A., B.C.L., Representative Fellow in Law.

JOHN REDPATH DOUGALL, M.A., Representative Fellow in Arts.

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HENRY T. BOVEY, M.A., C.E., Dean of the Faculty of Applied Science.

BERNARD J. HARRINGTON, B.A., Ph.D., Elective Fellow, Fac. App. Science.

Rev. E. J. REXFORD, B.A., Governors' Fellow.

ROBERT BELL, B.A. Sc., M.D., Representative Fellow in App. Science.

Rev. JOHN JENKINS, D.D., LL.D., Governors' Fellow.

Rev. CANON HENDERSON, M.A., Principal of the Montreal Diocesan Theological College.

Rev. GEORGE DOUGLAS, LL.D., Principal of the Montreal Wesleyan Theological College.

WILLIAM OSLER, M.D., Representative Fellow in Medicine.

CLEMENT H. McLEOD, Ma.E., Representative Fellow in Applied Science.

J. S. ARCHIBALD, M.A., B.C.L., Elective Fellow, Faculty of Law.

GEORGE ROSS, M.A., M.D., Elective Fellow, Faculty of Medicine.

FRANCIS J. SHEPHERD, M.D., Representative Fellow in Medicine.

JOHN S. HALL, B.A., B.C.L., Representative Fellow in Law.

Rev. R. W. NORMAN, M.A., D.C.L., Chairman of Protestant Board of School Commissioners.

R. P. HOWARD, M.D., Dean of Faculty of Medicine.

S. P. ROBINS, M.A., LL.D., Principal of McGill Normal School.

S. F. PASSMORE, B.A., Principal of St. Francis College.

FREDERICK W. KELLY, B.A., Ph.D., Representative Fellow in Arts.

(The Governors, Principal, and Fellows constitute, under the Charter, the Corporation of the University, which has the power, under the Statutes, to frame regulations touching Courses of Study, Matriculation, Graduat on and other Educational matters ; and to grant Degrees.)

SECRETARY, REGISTRAR, AND BURSAR :—

[*And Secretary of the Royal Institution.*]

William Craig Baynes, B.A., Cambridge, Residence and Office, East Wing, McGill College; Office hours 10 to 2.

James W. Brackenridge, B.C.L., Clerk.

OFFICERS OF INSTRUCTION.

JOHN WILLIAM DAWSON, M.A., LL.D., F.R.S., C.M.G. *Principal, Logan Professor of Geology and Professor of Natural History.*	East Wing, McGill College.
VEN. ARCHDEACON WILLIAM T. LEACH, M.A., D.C.L., LL.D. *Vice-Principal, Dean of the Faculty of Arts and Emeritus Professor in the Facult of Arts.*	16 University Street.
HENRY ASPINWALL HOWE, LL.D. *Emeritus Professor iu the Faculty of Arts.*	Outremont.
WILLIAM WRIGHT, M.D. *Emeritus Professor in the Faculty of Medicine.*	84 St. Famille Stre
ROBERT P. HOWARD, M.D. *Dean of the Faculty of Medicine, Professor of the Theor and Practice of Medicine.*	47 Union Avenue.
HON. WILLIAM BADGLEY, D.C.L. *Emeritus Professor in the Faculty o Law.*	64 McGill Col. Av.
HON. R. G. LAFLAMME, Q.C., D.C.L. *Emeritus Professor in Faculty of Law.*	23 Berri Street.
CHARLES F. A. MARKGRAF, M.A. *Professor of German Language and Literature.*	McGill College.
D. C. McCALLUM, M.D. *Emeritus Professor in the Faculty of Medicine.*	45 Union Avenue.
ALEXANDER JOHNSON, M.A., LL.D. (Trin. Col. Dublin.) *Professor of Mathematics, and Peter Redpath Professor Natural Philosophy, Vice-Dean of the Faculty of Arts.*	Prince of Wales Terrace.
REV. GEORGE CORNISH, M.A., LL.D. *Hiram Mills Professor of Classical Literature.—Honorary Librarian.*	177 Drummond Street.
PIERRE J. DAREY, M.A., B.C. *Professor of French Language and Literature.*	3 McGill College Av.
ROBERT CRAIK, M.D. *Emeritus Professor in the Faculty of Medicine.*	Phillips Square.
G. E. FENWICK, M.D. *Professor of Surgery.*	1404 St. Catherine Street.
JOSEPH M. DRAKE, M.D. *Emeritus Professor in the Faculty of Medicine.*	45 Beaver Hall Terrace.
N. W. TRENHOLME, M.A., B.C.L. *Professor Roman Law.*	Dorchester Av., Cote St. Antoine.
HON. J. S. C. WURTELE, Q.C., D.C.L. *Emeritus Professor in the Faculty of Law.*	8 Prince of Wales Terrace.
WILLIAM H. KERR, Q.C., D.C.L. *Dean of the Faculty of Law, Professor of International Law.*	268 University Street.
GILBERT P. GIRDWOOD, M.D. *Professor of Chemistry.*	28 Beaver Hall Terrace.
REV. J. CLARK MURRAY, LL.D. (Glasgow.) *Professor of Logic and John Frothingham Pro essor of Mental and Moral Philosophy.*	Mackay Street.
HON. H. F. RAINVILLE, LL.D. (Laval.) *Professor of Real Estate Law.*	192 St. Hubert Street.
GEORGE ROSS, M.A., M.D. *Professor o Clinical Medicine.*	49 Union Avenue.
BERNARD J. HARRINGTON, B.A., Ph.D. *David J. Greenshields Professor of Chemistry and Mineralogy, and Lecturer in Assaying and Mining.*	Wallbrae Pl., off 256 Uni. St.

THOMAS G. RODDICK, M.D.
Professor of Clinical Surgery. 80 Union Avenue.

WILLIAM OSLER, M.D.
Professor of Institutes of Medicine. 1351 St. Catherine Street.

WILLIAM GARDNER, M.D.
Professor of Gynæcology. 109 Union Avenue.

HENRY T. BOVEY, M.A., A.M.I.C.E., M.I.M.E., Fellow Queen's College, Cambridge.
Dean of the Faculty of Applied Science, Professor of Civil Engineering and Applied Mechanics. Ontario Avenue.

CHARLES E. MOYSE, B.A. (London.)
Molson Professor of English Language and Literature, Lecturer in History. 802 Sherbrooke.

JOHN S. ARCHIBALD, M.A., B.C.L.
Professor of Criminal and Constitutional Law. 113 Mackay Street.

EDMOND LAREAU, B.C.L.,
Professor of Legal History. 156 St. Denis Street.

MATTHEW HUTCHINSON, B.C.L.
Associate Professor of Civil Procedure. Olivier Street, Cote St. Antoine.

J. EMERY ROBIDOUX, B.C.L.
Associate Professor of Real Estate Law. 31 St. Hubert Street.

C. H. McLEOD, M.A.E.
Professor of Descriptive Geometry and Superintendent of Meteorological Observatory. Observatory McGill College.

LEONIDAS HEBER DAVIDSON, M.A., D.C.L. (Bishop's College.)
Professor of Commercial Law. 17 St. Lu Stre , or 194 St. James.

FRANCIS J. SHEPHERD, M.D.
Professor of Anatomy. 85 Mansfield Street.

FRANK BULLER, M.D.
Professor of Ophthalmology and Otolo 694 Dorchester Street.

ARTHUR A. BROWNE, B.A., M.D.
Professor of Midwifery and Diseases of Children. 1353 St. Catherine Street.

JAMES STEWART, M.D.
Professor of Materia Medica and Pharmacy. Medical Building, McGill College.

GEORGE WILKINS, M.D.
Professor of Medical Jurisprudence. 167 St. Antoine Street.

G. H. CHANDLER, M.A.
Lecturer in Mathematics, Faculty of Applied Science. 32 Lorne Avenue.

LEWIS A. HART, M.A., B.C.L.
Lecturer on the Theory and Practice of Notarial Deeds and Proceedings. 14 Dorchester Terrace, Côte St. Antoine.

RICHARD L. MACDONNELL, B.A., M.D.
Lecturer in Hygiene, an Demonstrator of Anatomy. 1433 St. Catherine Street.

REV. DANIEL GOUSSIRAT, B.A.
Lecturer in Hebrew and Oriental Literature. 130 Shuter Street.

D. P. PENHALLOW, B.Sc. (Amherst, U.S.)
Lecturer in Botany. 105 Union Avenue.

JOHN ANDREW.
Instructor in Elocution. 64 Roy Street.

FREDERICK S. BARNJUM.
Instructor in Gymnastics. 19 University Street.

GEORGE W. MAJOR, B.A., M.D.
Instructor in Laryngology. 1395 St. Catherine Street.

ALEXANDER D. BLACKADER, B.A., M.D.
Instructor in Diseases of Children. 4 Beaver Hall Terrace.

WILLIAM R. SUTHERLAND, M.D.
Curator of Medical Museum, and Asst. Dem. of Anatomy. 1390 St. Catherine Street.

LIBRARY.

M. WILLIAMS TAYLOR. *Assistant Librarian.* Library, McGill College.

General Statement.

SESSION OF 1884-5.

The Fifty-second Session of the University, being the Thirty-second under the amended Charter, will commence in the Autumn of 1884.

By Virtue of the Royal Charter, granted in 1821 and amended in 1852, the Governors, Principal and Fellows of McGill College constitute the Corporation of the University; and, under the Statutes framed by the Board of Governors, with approval of the Visitor, have the power of granting Degrees in all the Arts and Faculties, in McGill College, and Colleges affiliated thereto.

The Statutes and Regulations of the University have been framed on the most liberal principles, with the view of affording to all classes of persons the greatest possible facilities for the attainment of mental culture and professional training. In its religious character the University is Protestant, but not denominational; and while all possible attention will be given to the character and conduct of students, no interference with their peculiar religious views will be sanctioned.

The educational work of the University is carried on in McGill College, Montreal, and in the Affiliated Colleges and Schools.

I. McGILL COLLEGE.

THE FACULTY OF ARTS.—The complete course of study extends over four Sessions, of eight months each; and includes Classics and Mathematics, Experimental Physics, English Literature, Logic, Mental and Moral Science, Natural Science, and one Modern Language, or Hebrew; all which subjects are imperative in the first two years of the course; but in the third and fourth years options are allowed in favour of the Honour Courses in Classics, Mathematics, Mental and Moral Science, Natural Science, and English Literature. Certain exemptions are also allowed to professional Students. The course of study leads to the Degrees of B.A., M.A., and LL.D.

THE FACULTY OF APPLIED SCIENCE provides a thorough professional training, extending over three or four years, in Civil Engineering, Mechanical Engineering, Mining Engineering and Assaying, and Practical Chemistry, leading to the Degrees of Bachelor of Applied Science, Master of Engineering, and Master of Applied Science.

THE FACULTY OF MEDICINE.—The complete course of study in Medicine extends over four Sessions, of six months each, and one Summer Session of three months in the 3rd Academic Year, and leads to the Degree of M.D., C.M.

THE FACULTY OF LAW.—The complete course in Law extends over three Sessions of six months each, and leads to the degrees of B.C.L., and D.C.L.

II. AFFILIATED COLLEGES.

Students of Affiliated Colleges are matriculated in the University, and may pursue their course of study wholly in the Affiliated College, or in part in McGill College, and may come up to the University Examinations on the same terms with the Students of McGill College.

MORRIN COLLEGE, *Quebec*—Is affiliated in so far as regards Degrees in Arts and Law.

[Detailed information may be obtained from Rev. John Cook, D.D., Principal.]

ST. FRANCIS COLLEGE, *Richmond*—Is affiliated in so far as regards the Intermediate Examinations in Arts.

[Detailed information may be obtained from Principal Passmore, Richmond, P.Q.]

III. AFFILIATED THEOLOGICAL COLLEGES.

Affiliated Theological Colleges have the right of obtaining for their Students the advantage, in whole or in part, of the course of study in Arts, with such facilities in regard to exemptions as may be agreed on.

THE CONGREGATIONAL COLLEGE OF BRITISH NORTH AMERICA, *Montreal.*

THE PRESBYTERIAN COLLEGE OF MONTREAL, in connection with the Canada Presbyterian Church.

THE DIOCESAN COLLEGE OF MONTREAL.

THE WESLEYAN COLLEGE OF MONTREAL.

IV. AFFILIATED SCHOOLS.

THE MCGILL NORMAL SCHOOL provides the training requisite for Teachers of Elementary and Model Schools and Academies. Teachers trained in this School are entitled to Provincial Diplomas.

THE MODEL SCHOOLS OF THE MCGILL NORMAL SCHOOL are Elementary Schools, divided into a Boys' Department, Girls' Department, and Primary School.

COLLEGIATE INSTITUTES, ACADEMIES, and HIGH SCHOOLS may be affiliated in so far as regards Matriculation in Arts and Applied Science, under the University regulations. The following are at present so recognized:—

Prince of Wales College, Charlottetown, P.E.I.; the Collegiate Institute, Hamilton, Ont.; the Canadian Literary Institute, Woodstock, Ont.; the High School, Montreal; the Bishop's College School, Lennoxville; the Girls' High School, Montreal; the Lachute Academy; the Dunham Academy; the Knowlton Academy; the Waterloo Academy.

BENEFACTORS OF

McGill University, Montreal.

I. ORIGINAL ENDOWMENT, 1811.

THE HONORABLE JAMES McGILL, who was born at Glasgow, 6th Oct., 1744, and died at Montreal, 19th Dec., 1813, by his last will and testament, under date 8th January, 1811, devised the Estate of Burnside, situated near the City of Montreal, and containing forty-seven acres of land, with the Manor House and Buildings thereon erected, and also bequeathed the sum of ten thousand pounds in money, unto the "Royal Institution for the Advancement of Learning," a Corporation constituted in virtue of an Act of Parliament passed in the Forty-first Year of the Reign of His Majesty, King George the Third, to erect and establish a University or College for the purpose of Education and the advancement of learning in the Province of Lower Canada, with a competent number of Professors and Teachers to render such Establishment effectual and beneficial for the purposes intended; requiring that one of the Colleges to be comprised in the said University, should be named and perpetually be known and distinguished by the appellation of "McGill College."

The value of the above-mentioned property was estimated at the date of the bequest at.....$120,000

II. UNIVERSITY BUILDINGS.

THE WILLIAM MOLSON HALL, being the west wing of the McGill College buildings, with the Museum Rooms, and the Chemical Laboratory and Class Rooms, was erected in 1861, through the munificent donation of the founder, whose name it bears.

THE PETER REDPATH MUSEUM, the gift of the donor whose name it bears, was announced by him as a donation to the University in 1880, and was formally opened to the public, August, 1882.

III. ENDOWED CHAIRS.

THE MOLSON CHAIR OF ENGLISH LANGUAGE AND LITERATURE, in 1856, by the Honorable John Molson, Thomas Molson, Esq., and William Molson, Esq., —$20,000.

THE PETER REDPATH CHAIR OF NATURAL PHILOSOPHY, in 1871, by Peter Redpath, Esq.,—$20,000.

THE LOGAN CHAIR OF GEOLOGY, in 1871, by Sir W. E. Logan, LL.D., F.R.S., and Hart Logan, Esq.,—$20,000.

THE JOHN FROTHINGHAM CHAIR OF MENTAL AND MORAL PHILOSOPHY, in 1873, by Miss Louisa Frothingham,—$20,000.

THE WILLIAM SCOTT CHAIR OF CIVIL ENGINEERING, in 1884, endowed by the last will of the late Miss Barbara Scott, of Montreal, $30,000.

THE MAJOR HIRAM MILLS CHAIR OF CLASSICS, in 1882, endowed by the last will of the late Major Hiram Mills of Montreal,—$42,000.

THE DAVID J. GREENSHIELDS CHAIR OF CHEMISTRY AND MINERALOGY, in the Faculties of Arts and Applied Science, in 1883, endowed by the last will of the late David J. Greenshields, Esq., of Montreal,—$40,000.

THE GALE CHAIR, in the Faculty of Law, endowed by the late Mrs. Andrew Stuart (née Agnes Logan Gale), of Montreal, in memory of her father, the late Honorable Mr. Justice Gale,—$25,000; part received, May, 1883.

IV. EXHIBITIONS AND SCHOLARSHIPS IN ARTS.

THE JANE REDPATH EXHIBITION, $100 annually—founded in 1868 by Mrs. Redpath of Terrace Bank, Montreal, and endowed with the sum of $1,667.

THE MCDONALD SCHOLARSHIPS AND EXHIBITIONS, 10 in number—founded in 1871 and endowed with the sum of $25,000, in 1882, by William C. McDonald, Esq.—Annual value, $1250.

THE CHARLES ALEXANDER SCHOLARSHIP, for Classics—founded in 1871, by Charles Alexander, Esq.—Annual value, $120.

THE TAYLOR SCHOLARSHIP—founded in 1871, by T. M. Taylor, Esq. Annual value, $100—terminated in 1878.

THE SCOTT EXHIBITION—founded by the Caledonian Society of Montreal in commemoration of the Centenary of Sir Walter Scott, and endowed in 1872 with the sum of $1,100 subscribed by members of the Society, and other citizens of Montreal. The Exhibition is given annually in the Faculty of Applied Science.

THE BARBARA SCOTT SCHOLARSHIP OF CLASSICAL LANGUAGES AND LITERATURE,—founded by the last will of the late Miss Barbara Scott of Montreal, in the sum of $2,000 :—amount in part received, 1884.

THE DAVID MORRICE SCHOLARSHIP—in the subject of Institutes of Medicine, in the Faculty of Medicine—founded in 1881—value $100.

THE GEORGE HAGUE EXHIBITION—founded in 1881 in the Faculty of Arts, for the term of four years, value $125.

THE BURLAND SCHOLARSHIP—founded 1879, J. H. BURLAND, ESQ. $100 for a Scholarship in Applied Science, for three years, being $300.

THE MAJOR HIRAM MILLS MEDAL AND SCHOLARSHIP, founded by the will of the late Major Hiram Mills of Montreal, and endowed with the sum of $1,500.

V. ENDOWMENTS OF MEDALS AND PRIZES.

In 1856 Henry Chapman, Esq., founded a gold medal, to be named the "Henry Chapman Gold Medal," to be given annually in the graduating class in Arts. This Medal was endowed by Mr. Chapman in 1874, with the sum of $700.

In 1860 the sum of £200, presented to the College by H. R. H. the Prince of Wales, was applied to the foundation of a Gold Medal, to be called the "Prince of Wales Gold Medal," which is given in the graduating class for Honour Studies in Mental and Moral Philosophy.

In 1864 the "Anne Molson Gold Medal" was founded and endowed by Mrs. John Molson of Belmont Hall, Montreal, for an Honour Course in Mathematics and Physical Science.

In the same year the "Shakespeare Gold Medal," for an Honour Course to comprise and include the works of Shakespeare and the Literature of England from his time to the time of Addison, both inclusive, and such other accessory subjects as the Corporation may from time to time appoint—was founded and endowed by citizens of Montreal, on occasion of the three hundreth anniversary of the birth of Shakespeare.

In the same year the "Logan Gold Medal," for an Honour Course in Geology and Natural Science, was founded and endowed by Sir William Edmond Logan, LL.D., F.R.S., F.G.S., &c.

In 1865 the "Elizabeth Torrance Gold Medal" was founded and endowed by John Torrance, Esq., of St. Antoine Hall, Montreal, in memory of the late Mrs. John Torrance, for the best student in the graduating class in Law, and more especially for the highest proficiency in Roman Law.

In the same year, the "Holmes Gold Medal" was founded by the Medical Faculty, as a memorial of the late Andrew Holmes, Esq., M.D., LL.D., late Dean of the Faculty of Medicine, to be given to the best student in the graduating class in Medicine who shall undergo a special examination in all the branches, whether Primary or Final.

In 1874 a Gold and Silver Medal were given by his Excellency the Earl of Dufferin, Governor General of Canada, for competition in the Faculty of Arts, and continued till 1878.

In 1878 the "Sutherland Gold Medal" was founded by Mrs. Sutherland of Montreal, in memory of her late husband, Prof. William Sutherland, M.D., for competition in the classes of Theoretical and Practical Chemistry in the Faculty of Medicine, together with creditable standing in the Primary Examinations.

In 1875 the "Neil Stewart prize of $20 in Hebrew" was endowed by Neil Stewart, Esq., of Vankleek Hill, in the sum of $340.

In 1880 a Gold and a Silver Medal were given by His Excellency the Marquis of Lorne, Governor General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science; continued till 1883.

In 1883 a Gold, Silver and Bronze Medal were given by R. J. Wicksteed, Esq., M.A., LL.D., for competition in "Physical Culture" by Students in the Graduating Class and 2nd and 3rd years who have attended the University Gymnasium.

In 1884 a Gold and a Silver Medal were given by His Excellency the Marquis of Lansdowne, Governor General of Canada, the former for competition in the Faculty of Arts, the latter for competition in the Faculty of Applied Science.

VI. SUBSCRIPTIONS TO THE GENERAL ENDOWMENT.

1856.

John Gordon, McKenzie, Esq...	$2000	Charles Alexander, Esq.....	$600
Ira Gould, Esq.....	2000	Moses E. David, Esq.....	600
John Frothingham, Esq.....	2000	Wm. Carter, Esq.....	600
John Torrance, Esq.....	2000	Thomas Paton, Esq.....	600
James B. Greenshields, Esq....	1200	Wm. Workman, Esq.....	600
William Busby Lambe, Esq....	1200	Honourable Sir A. T. Galt.....	600
Sir George Simpson, Knight....	1000	Honourable Luther H. Holton..	600
Henry Thomas, Esq.....	1000	Henry Lyman, Esq	600
John Redpath, Esq.....	1000	David Torrance, Esq.....	600
James McDougall, Esq.....	1000	Edwin Atwater, Esq.....	600
James Torrance, Esq.....	1000	Theodore Hart, Esq.....	600
Honourable James Ferrier.....	1000	William Forsyth Grant, Esq ...	600
Harrison Stephens, Esq.....	1000	Robert Campbell, Esq.....	600
Henry Chapman, Esq.....	600	Alfred Savage, Esq.....	600
Honourable Peter McGill.....	600	James Ferrier, Jr., Esq.....	600
John James Day, Esq.....	600	William Stephens, Esq.....	600
Thomas Brown Anderson, Esq.	600	N. S. Whitney, Esq.....	600
Peter Redpath, Esq.....	600	William Dow, Esq.....	600
Thomas M. Taylor, Esq.....	600	William Watson, Esq.....	600
Joseph McKay, Esq.....	600	Edward Major, Esq.....	600
Donald Lorn McDougall, Esq..	600	Honourable Charles Dewey Day	200
Honourable Sir John Rose.....	600	John R. Esdaile, Esq.....	200

1871.

William Molson, Esq	$5000	T. W. Ritchie, Esq	$600
William C. McDonald, Esq	5000	Messrs. A. & W. Robertson	600
Thomas Workman, Esq	5000	Messrs. Sinclair, Jack & Co	250
John Frothingham, Esq	5000	John Reddy, Esq., M.D	100
J. H. R. Molson, Esq	2000	Wm. Lunn, Esq	100
John McLennan, Esq	1000	Kenneth Campbell, Esq	100
B. Gibb, Esq	600	R. A. Ramsay, Esq	100
W. Notman, Esq	600	William Rose, Esq	50

1881–82.

Hugh McLennan, Esq	$5000	O. S. Wood, Esq	1000
G. A. Drummond, Esq	4000	J. S. McLachlan, Esq	1000
George Hague, Esq	3000	J. B. Greenshields, Esq. (London)	1000
M. H. Gault, Esq	2000	Warden King, Esq	1000
Andrew Robertson, Esq	1000	W. B. Cumming	1000
Robert Campbell, Esq	1000	Mrs. Hew Ramsay	500
J. Hickson, Esq., & Mrs. Hickson	1000	R. A. Ramsay, Esq	500
Mrs. Andrew Dow	1000	H. H. Wood, Esq	500
Alexander Murray, Esq	1000	James Burnett, Esq	500
Miss Orkney	1000	Charles Gibb, Esq	500
Hector MacKenzie, Esq	1000		

1883-84.

Edward MacKay, Esq 5000

VII. SUBSCRIPTION FOR CURRENT EXPENSES IN 1881–82.

Principal Dawson	$1000	Being	$1000
J. H. R. Molson, Esq	1000	Per annum, 5 years, being	5000
George Stephen, Esq	1000	" " "	5000
Hon. Donald A. Smith	1000	" " "	5000
David Morrice, Esq	200	" " "	1000
Messrs. Gault Brothers & Co	200	" " "	1000
Messrs. A. S. & S. H. Ewing	200	" " "	1000
Hon. Robert Mackay	300	Per annum, 2 years, being	600
Jonathan Hodgson, Esq	100	Per annum, 5 years, being	500
Geo. M. Kinghorn, Esq	100	" " "	500
Thomas Craig, Esq	100	Per annum, 2 years, being	200
John Rankin, Esq	200	Being	200
John Duncan, Esq	200	"	200
Robert Benny, Esq	100	"	100
Miss E. A. Ramsay	100	"	100
Hugh Paton, Esq	50	For 2 years, being	100
George Brush, Esq	25	For 5 years, being	125
J. M. Douglas, Esq	50	Being	50
James Court, Esq	50	"	50
David J. Greenshields, Esq	300	"	300

VIII. ENDOWMENT FOR FACULTY OF APPLIED SCIENCE.

1871.

Daniel Torrance, Esq	$5000
George Moffatt, Esq	1000
Charles J. Brydges, Esq	1000
Robert J. Reekie, Esq	1000

IX. ANNUAL SUBSCRIPTIONS IN AID OF THE FACULTY OF APPLIED SCIENCE.

1871.

Hon. James Ferrier (per annum, for 10 years)	$100
Peter Redpath, Esq. (per annum, for 10 years)	400
John H. R. Molson, Esq. (per annum, for 10 years)	400
George H. Frothingham, Esq. (per annum, for 7 years)	400
M. James Claxton, Esq. (per annum, for 6 years)	100
Donald Ross, Esq. (per annum, for 5 years)	50

1878-79.

Miss Mary Frothingham (per annum, for 3 years)	$400
H. McLennan, Esq. (per annum, for 5 years)	100
A. F. Gault, Esq., do do	100
Gilbert Scott, Esq., for 2 years	100
Joseph Hickson, Esq., do	100
Principal Dawson, do	300
His Excellency the Marquis of Lorne	500
Mrs. Redpath (Terrace Bank)	100

1882-83.

To provide assistance in Mechanical Engineering

E. B. Greenshields, Esq.	$50
J. E. Bovey, Esq	50
Professor H. T. Bovey	61
Smaller amounts	40

X. SUBSCRIPTIONS FOR SPECIAL OBJECTS.

1883-84.

Subscriptions for the support of the Chair of Botany.

Dr. J. W. Dawson	$500	Per annum, 5 years, being			$2500
Hon. D. A. Smith	250	"	"	"	1200
J. H. R. Molson, Esq	100	"	"	"	500
Mrs. J. H. R. Molson	100	"	"	"	500
G. Hague, Esq	100	"	"	"	500
Mrs. Redpath	100	"	"	"	500
Hugh Mackay, Esq	100	"	"	"	500
Robert Moat, Esq	100	"	"	"	500
W. C. McDonald, Esq	100	"	"	"	500
Charles Gibb, Esq	50	"	"	"	250
Miss Orkney,	50	"	"	"	250
Robert McKay, Esq	50	"	"	"	250
Mrs. Molson	50	"	"	"	250
Mrs. John Molson	50	"	"	"	250
John Stirling, Esq	50	"	"	"	250
Warden King, Esq	50	"	"	"	250
Miss Hall	50	"	"	"	250
Robert Angus, Esq	50	"	"	"	250
D. A. P. Watt, Esq	50	"	"	"	250
Hugh McLennan, Esq	25	"	"	"	150
Joseph Hickson, Esq	10	"	"	"	50
Mrs. Phillips					10

Subscriptions for the purchase of Philosophical Apparatus, 1867.

William Molson, Esq	$500	John Frothingham, Esq	$100
John H. R. Molson, Esq	500	David Torrance, Esq	100
Peter Redpath, Esq.	500		
George Moffatt, Esq.	250		$2,050
Andrew Robertson, Esq.	100		

Subscriptions for the erection of a fire-proof Building for the Carpenter Collection of Shells, 1868.

Peter Redpath, Esq.	$500	Wm. Dow, Esq	$100
William Molson, Esq	500	Thomas Rimmer, Esq.	100
Harrison Stephens, Esq	100	Andrew Robertson, Esq	100
Robert J. Reekie, Esq.	100	Mr. Redpath	100
John H. R. Molson, Esq.	100	Benaiah Gibb, Esq	50
Sir William E. Logan, F.R.S.	100	Honourable John Rose	50
John Molson, Esq.	100		$2,180
Thos. Workman, Esq., M.P.	100		
Geo. H. Frothingham, Esq.	100		

Subscriptions for the erection of the Lodge and Gates.

William Molson, Esq	$100	James A. Mathewson, Esq.	$100
John H. R. Molson, Esq.	100	Peter Redpath, Esq	100
William Workman, Esq	100	G. H. Frothingham, Esq.	100
Joseph Tiffin, Jr., Esq.	100	G. D. Ferrier, Esq	100
Thos. J. Claxton, Esq.	100	Geo. W. Warner, Esq	100
James Linton, Esq	100	John Smith, Esq	100
William McDougall, Esq	100	Charles Alexander, Esq.	100
Charles J. Brydges, Esq.	100	J. Evans, Esq	100
George Drummond, Esq.	100	Henry Lyman, Esq	100
Thomas Rimmer, Esq.	100		$2,100
William Dow, Esq	100		
John Frothingham, Esq.	100		

Subscriptions for the internal fittings of the Library and Museum of the Faculty of Medicine, 1872.

G. W. Campbell, A.M., M.D.	$1200	Robert Craik, M.D	200
Wm. E. Scott, M.D.	200	Geo. E. Fenwick, M.D.	200
Wm. Wright, M.D.	200	Joseph M. Drake, M.D.	200
Robert P. Howard, M.D.	200	George Ross, M.A., M.D.	50
Duncan C. McCallum, M.D.	200		

Library and Museum Funds.

Wm. Molson, Esq., for Library Fund	$4000	Hon. F. W. Torrance, Mental and Moral Philosophy Book Fund	1000
Wm. Molson, Esq., for Museum Fund	2000	Mrs. Redpath, for the endowment of the Wm. Wood Redpath Library Fund	1000
		A Friend by the Hon. F. W. Torrance	400

Subscriptions for Library and Museum.

John Thorburn, for purchase of Books	$90	in 1882	1000
Andrew Drummond, do for Applied Science	25	A Lady, for Museum Expenses in 1883	2000
T. J. Claxton, Esq., for purchase Specimens for Museum	250	Peter Redpath, for Museum Expenses, 1882	1000
Mrs. H. G. Frothingham, for the arrangement of Dr. Carpenter's Collection of Mazatlan shells.	233	Peter Redpath, for Museum Expenses, 1883	1000
A Lady, for Museum Expenses		A Friend, for the purchase of, specimens for the Museum	1000

Subscriptions for Apparatus.

A Lady, for the purchase of Mining Models	$1000
Thos. McDougall, Esq., for the same	25
J. Livesey, Esq., through Dr. Harrington, for the same	50
George Stephen, Esq., for the same	50
Charles Gibb, B. A., donation for Apparatus in Applied Science	50
Andrew Drummond, Esq., to Library Fund of Faculty of Applied Science.	25
A Telescope and Astronomical Instruments, the gift of Charles T. Blackman, Esquire, of Montreal, and called after his name.	
The Local Committee for the reception (1881) of American Society of Civil Engineers ... For the purchase of appliances for the department of Civil Engineering in Faculty of Applied Science	475

Subscriptions for Physiological Laboratory of Medical Faculty, 1879.

Dr. Campbell	$100	Dr. Ross	$50
Dr. Howard	100	Dr. Roddick	50
Dr. Craik	100	Dr. Buller	50
Dr. McCallum	100	Dr. Gardner	50
Dr. Drake	100	Dr. Osler	50
Dr. Godfrey	100		
Dr. McEachran, F.R.C.V.S.	100		$ 950

Miscellaneous.

Hon. C. Dunkin. M.P., in aid of the chair of Practical Chemistry	$1200	T. M. Thompson, Esq., $250 for two Exhibitions in September, 1871; $200 for two Exhibitions in 1872	$450
Principal Dawson, in aid of the same	1200	Rev. Colin C. Stewart, for the "Stewart Prize in Hebrew.". (Terminated in 1875.)	60
P. Redpath, Esq., do do	226		

R. A. Ramsay, M.A., B.C.L., to defray the expenses of re-erecting the tomb of the late Hon. James McGill $150 00

XI. ENDOWMENT, HELD IN TRUST BY THE BOARD OF ROYAL INSTITUTION.

The "Hannah Willard Lyman Memorial Fund," contributed by subscription of former pupils of Miss Lyman, and invested as a permanent Endowment, to furnish annually a Scholarship or Prize in a "College for Women" affiliated to the University; or in Classes for the Higher Education of Women approved by the University. The amount of the fund is at present $1,100.

XII. ENDOWMENTS OF THE FACULTY OF MEDICINE.

"The Leanchoil Endowment Fund," contributed by the Honourable Donald Smith, $50,000.

"The Campbell Memorial Fund," being subscriptions to the amount of $50,000.

XIII. SPECIAL COLLECTIONS OF BOOKS PRESENTED TO THE LIBRARY.

1. The Peter Redpath Collection of Historical Books—presented by Peter Redpath, Esq., of Montreal, 2272 Volumes.

2. The Robson Collection of works in Archæology and general Literature, presented by Dr. John Robson of Warrington, England, 3436 Volumes.

3. The Charles Alexander Collection of Classical Works, presented by C. Alexander, Esq., of Montreal, 221 Volumes.

4. Frederick Griffin, Esq., Q.C., Collection of Books, being the whole of his Library, bequeathed by his will, 2692 Volumes.

5. The Hon. Mr. Justice MacKay, Collection of Books, being the whole of his Library, 1907 volumes.

XIV. SPECIAL COLLECTIONS PRESENTED TO THE MUSEUM.

1. The Holmes Herbarium—presented by the late Andrew F. Holmes, M.D.

2. The Carpenter Collection of Shells—presented by the late P. P. Carpenter, Ph.D.

3. The Collection of Casts of Ivory Carvings issued by the Arundel Society—presented by Henry Chapman, Esq.

4. The McCulloch Collection of Birds and Mammals, collected by the late Dr. M. McCulloch, of Montreal, and presented by his heirs.

5. The Logan Memorial Collection of Specimens in Geology and Natural History, presented by the heirs of the late Sir W. E. Logan, LL.D., F.R.S.

6. The Dawson Collection in Geology and Palæontology, being the Private Collections of Principal Dawson, presented by him to the Museum.

7. The Portrait of Peter Redpath, Esq., painted by Mr. Sydney Hodges of London and presented by the Citizens of Montreal.

(See also "List of Donations to the Library and Museum," printed annually in the Calendar and Report of the Museum.)

THE GRADUATES' FUND.

THE FUND FOR ENDOWMENT OF THE LIBRARY.

The Graduates' Society of the University, in 1876, passed the following Resolution :—

"*Resolved*:—"That the members and graduates be invited to subscribe "to a fund for the endowment of the Libraries of the University ; said fund to be "invested and the proceeds applied under the supervision of the Council of the "Society in annual additions to the Libraries ; an equitable division of said pro- "ceeds to be made by the Council between the University Library and those of "the Professional Faculties."

(In terms thereof, the following subscriptions have been announced to date May 1st, 1883). They are payable in one sum, or in instalments as subscribers have elected.

Alphabetically Arranged.

Baynes, O'Hara, B.C.L.	$ 50
Bethune, M. B., M.A., B.C.L.	50
Blackader, Alex. D., B.A., M.D.	50
Burland, J. H., B. App. Sc.	120
Browne, A. A., B.A., M.D.	50
Cline, J. D., B.A., M.D.	25
Cushing, Lemuel, LL.D., B.C.L.	25
Dougall, J. R., M.A.	50
Ells, R. W., M.A.	50
Empson, Rev. J., M.A.	25
Gardner, Wm., M.D.	100
Gibb, Charles, B.A.	50
Gilman, F. E., LL.D., B.C.L.	100
Gould, C. H., B.A.	100
Hall, J. S., Jr., B.A., B.C.L.	50
Hall, Rev. W., M.A.	10
Harrington, B. J., B.A., Ph.D.	50
Holton, Edward, B.C.L.	100
Hutchison, M., B.C.L.	5
Keller, F. J., B.C.L.	25
Kelley, F. W., B.A., Ph.D.	100
Laing, Rev. R., M.A.	100
Lyman, F. S., B.A., B.C.L.	50
Lyman, H. H., M.A.	100
Molson, Wm., M.D.	100
Mackenzie, Fred., B.C.L.	100
Maclaren, J. J., M.A., B.C.L.	100
McCord, D. R., M.A., B.C.L.	100
McGregor, James, LL.D.	80
Macleod, C. H., Ma.E.	50
Macmaster, D., B.C.L.	100
Marler, Wm. De M., B.A., B.C.L.	125
Osler, Wm., M.D.	100
Ramsay, R. A., M.A., B.C.L.	100
Rexford, Rev. E. I., B.A.	50
Robertson, Alex., B.A.	100
Robins, S. P., LL.D.	50
Roddick, T. G., M.D.	100
Ross, George, M.A., M.D.	100
Shepherd, J. F., M.D.	100
Torrance, J. F., B.A., B. App. Sc.	100
Trenholme, N. W., M.A., B.C.L.	100
Total to date	$3090

THE DAWSON PRINCIPALSHIP FOUNDATION.

The Graduates' Society of the University, in 1880, and in commemoration of the completion by Dr. Dawson of his twenty-fifth year as Principal, resolved to raise, with the assistance of their friends, a Fund towards the Endowment of the Principalship, under the above name.

Details of the scheme can be had from the Treasurer, Wm. Molson, Esq., M.D. The following subscriptions have been announced to date May 1st, 1883. They are payable in one sum, in instalments without interest, or with interest till payment of capital, as subscribers have elected.

Alphabetically Arranged.

Abbott, H., B.C.L.	$60
Archbald, H., B. App. Sc.	20
Bethune, M. B., M.A., B.C.L.	50
Carter, C. B., B.C.L.	100
Cruikshank, W. G., B.C.L.	100
Dougall, J. R., M.A.	250
Dawson, W. B., M.A., Ma.E.	50
Gibb, C., B.A.	100
Hutchison, M., B.C.L.	400
Hall, Rev. Wm., M.A.	100
Hall, J. S., jr., B.A., B.C.L.	100
Harrington, B. J., B.A., Ph.D.	50
Kirby, J., LL.D., D.C.L.	50
Lighthall, W. D., B.A., B.C.L.	100
Lyman, H. H., M.A.	100
Lyman, A. C., M.A., B.C.L.	50
Leet, S. P., B.C.L.	100
McCormick, D., B.C.L.	100
McLennan, J. S., B.A.	100
McGibbon, R. D., B.A., B.C.L.	100
McGoun, A., jr., B.A., B.C.L.	50
Ramsay, R. A., B.A., B.C.L.	50
Stewart, J., M.D.	60
Stewart, D. A., B. App. Sc.	20
Stephens, C. H., B.C.L.	100
Spencer, J. W., B.A.Sc., Ph.D.	50
Tait, M. M., B.C.L.	100
Taylor, A. D., B.A., B.C.L.	100
Trenholme, N. W., M.A., B.C.L.	400
Total to date	$3010

ACADEMICAL YEAR, 1884-85.

SEPTEMBER, 1884.

1 Monday	Normal School opens
2 Tuesday	
3 Wednesday	Meeting of Normal School Committee.
4 Thursday	
5 Friday	
6 Saturday	
7 SUNDAY	
8 Monday	
9 Tuesday	
10 Wednesday	
11 Thursday	
12 Friday	
13 Saturday	
14 SUNDAY	
15 Monday	
16 Tuesday	
17 Wednesday	
18 Thursday	
19 Friday	
20 Saturday	
21 SUNDAY	
22 Monday	Meetings Fac. Arts and App. Science.
23 Tuesday	Mat. and Supp. Ex'ns in Classics Exhib. and Scholarship Exam.
24 Wednesday	Mat. and Sup. Ex'ns in Math's. Exhibition et Schlarship Ex'ns
25 Thursday	Mat. and Supp. Ex'ns in English, Logic, Men. and Mor. Phil. Exhib. and Sch. Exam'ns.
26 Friday	Mat. and Supp. Ex'ns in Modern Lang's and Nat. Sc.; Exhib. and Sch. Exam'ns. Matriculation Exam's in Med.
27 Saturday	Lect's in Arts et App. Sc. begin.
28 SUNDAY	Meeting of Governors.
29 Monday	Meetings of Faculty of Arts.
30 Tuesday	Summer Essays in Applied Sc. given in.

OCTOBER, 1884.

1 Wednesday	Meeting of Faculty of Arts. Session of Medical and Law Faculties begins. Meeting of Nor. Sch. Committee.
2 Thursday	
3 Friday	
4 Saturday	
5 SUNDAY	
6 Monday	Founder's Birthday.
7 Tuesday	
8 Wednesday	The William Molson Hall opened 1862. Meeting Faculty of Arts.
9 Thursday	Meeting of Fac. of Applied Sc.
10 Friday	
11 Saturday	
12 SUNDAY	
13 Monday	
14 Tuesday	
15 Wednesday	
16 Thursday	
17 Friday	
18 Saturday	
19 SUNDAY	
20 Monday	Meeting Museum Committee.
21 Tuesday	Meeting Library Committee.
22 Wednesday	Regular Meeting of Corporation. School Examiners appointed, Reports on Schol'ship et Exh. Accounts audited.
23 Thursday	
24 Friday	
25 Saturday	Meeting of Governors.
26 SUNDAY	
27 Monday	
28 Tuesday	
29 Wednesday	Meeting of Faculty of Arts.
30 Thursday	
31 Friday	

NOVEMBER, 1884.

1 Saturday	
2 SUNDAY	
3 Monday	
4 Tuesday	
5 Wednesday	Meet' of Nor. School Com'tee.
6 Thursday	Meeting of Fac. App. Science.
7 Friday	
8 Saturday	
9 SUNDAY	
10 Monday	
11 Tuesday	
12 Wednesday	Meeting of Faculty of Arts.
13 Thursday	
14 Friday	
15 Saturday	
16 SUNDAY	
17 Monday	
18 Tuesday	
19 Wednesday	
20 Thursday	
21 Friday	
22 Saturday	Meeting of Governors.
23 SUNDAY	
24 Monday	
25 Tuesday	
26 Wednesday	Meeting of Faculty of Arts.
27 Thursday	
28 Friday	
29 Saturday	
30 SUNDAY	

DECEMBER 1884.

1 Monday	
2 Tuesday	
3 Wednesday	Meeting of Nor. Sch. Com'tee
4 Thursday	Meeting of Fac. of App. Sc.
5 Friday	
6 Saturday	
7 SUNDAY	
8 Monday	
9 Tuesday	
10 Wednesday	
11 Thursday	
12 Friday	Lectures in Arts and Ap. Sc. end.
13 Saturday	
14 SUNDAY	
15 Monday	Christmas Examinations begin.
16 Tuesday	
17 Wednesday	
18 Thursday	
19 Friday	
20 Saturday	Meeting of Governors.
21 SUNDAY	
22 Monday	Christmas Vacation begins.
23 Tuesday	
24 Wednesday	
25 Thursday	Christmas-Day.
26 Friday	
27 Saturday	
28 SUNDAY	
29 Monday	
30 Tuesday	
31 Wednesday	

JANUARY, 1885.

1 Thursday	
2 Friday	
3 Saturday	Christmas Vacation ends.
4 SUNDAY	
5 Monday	Lectures in Arts, Law, Med. & Applied Science recommence.
6 Tuesday	
7 Wednesday	Meeting of Fac. of Arts. Meeting of Nor. Sc. Committee.
8 Thursday	Meeting of Fac. of App. Science
9 Friday	
10 Saturday	
11 SUNDAY	
12 Monday	
13 Tuesday	
14 Wednesday	
15 Thursday	
16 Friday	
17 Saturday	
18 SUNDAY	
19 Monday	
20 Tuesday	
21 Wednesday	Meeting of Faculty of Arts.
22 Thursday	
23 Friday	
24 Saturday	Meeting of Governors.
25 SUNDAY	
26 Monday	Meeting of Museum Committee.
27 Tuesday	Meeting of Library Committee.
28 Wednesday	Regular Meeting of Corporation, Examiners appointed. Annual Report to Visitor.
29 Thursday	Theses for M.A. & LL.D. to be sent in to the Vice-Dean of Faculty of Arts.
30 Friday	
31 Saturday	

FEBRUARY, 1885.

1 SUNDAY	
2 Monday	Theses for Deg. of B.C.L. to be sent in to Dean of Fac. of Law.
3 Tuesday	
4 Wednesday	Meeting of Faculty of Arts and of Nor. Sc. Committee.
5 Thursday	Meeting of Examiners.
6 Friday	
7 Saturday	
8 SUNDAY	
9 Monday	
10 Tuesday	
11 Wednesday	
12 Thursday	Meeting of Fac. App. Science.
13 Friday	
14 Saturday	
15 SUNDAY	
16 Monday	Meeting of Faculty of Arts.
17 Tuesday	
18 Wednesday	No Lectures.
19 Thursday	
20 Friday	Supplemental Exam's in Arts and Applied Science.
21 Saturday	
22 SUNDAY	
23 Monday	
24 Tuesday	
25 Wednesday	
26 Thursday	
27 Friday	
28 Saturday	Meeting of Governors.

MARCH, 1885.

1 SUNDAY	
2 Monday	Theses for Degree of B.C.L. to be sent in to Dean of Faculty.
3 Tuesday	
4 Wednesday	Meeting of Fac. of Arts and meeting Nor. Sc. Committee.
5 Thursday	Meeting of Fac. of Ap. Science.
6 Friday	
7 Saturday	
8 SUNDAY	
9 Monday	
10 Tuesday	
11 Wednesday	
12 Thursday	Examinations in Law.
13 Friday	Examinations in Law. Lectures in Medicine end.
14 Saturday	Exam. in Botany, Med. Fac.
15 SUNDAY	
16 Monday	Examinations in Law.
17 Tuesday	Examinations in Law.
18 Wednesday	Meeting of Fac. of Arts. Examinations in Law.
19 Thursday	
20 Friday	Primary Examinations in Med. Examinations in Law.
21 Saturday	Primary Examinations in Med. Examinations in Law.
22 SUNDAY	
23 Monday	Final Examinations in Med.
24 Tuesday	Final Examinations in Med.
25 Wednesday	Meeting of Faculty of Arts. Reports of Attendance on Lects.
26 Thursday	
27 Friday	Lect. in Arts and App. Sc. end.
28 Saturday	Meeting of Governors.
29 SUNDAY	
30 Monday	Convocation for Degrees in Law. Ordinary Exam's in Applied Science begin.
31 Tuesday	B.A. Hon. Exam's begin. Convocation for Degrees in Med.

APRIL, 1885.

1 Wednesday	Ord. Ex's in Arts and Meet. of Fac. Meet. of Nor. Sc. Com.
2 Thursday	
3 Friday	Good-Friday. Easter Vacation begins.
4 Saturday	
5 SUNDAY	Easter-day.
6 Monday	
7 Tuesday	Easter vacation ends.
8 Wednesday	
9 Thursday	Meeting of Fac. of App. Science
10 Friday	
11 Saturday	
12 SUNDAY	
13 Monday	
14 Tuesday	
15 Wednesday	Meeting of Fac. of Arts. Meeting of Examiners.
16 Thursday	
17 Friday	
18 Saturday	
19 SUNDAY	
20 Monday	Meeting of Museum Committee.
21 Tuesday	Meeting of Library Committee.
22 Wednesday	Regular Meet'g of Corporation.
23 Thursday	
24 Friday	
25 Saturday	Meeting of Governors.
26 SUNDAY	
27 Monday	
28 Tuesday	Meeting of Examin's. Declaration of Results of Exam's.
29 Wednesday	
30 Thursday	Meeting of Convocation.

MAY, 1885.

1 Friday	
2 Saturday	
3 SUNDAY	
4 Monday	
5 Tuesday	
6 Wednesday	Normal School Committee.
7 Thursday	
8 Friday	
9 Saturday	
10 SUNDAY	
11 Monday	
12 Tuesday	
13 Wednesday	Meeting of Examiners for Sch.
14 Thursday	Examinations.
15 Friday	
16 Saturday	
17 SUNDAY	
18 Monday	
19 Tuesday	
20 Wednesday	
21 Thursday	
22 Friday	
23 Saturday	Meeting of Governors.
24 SUNDAY	Queen's Birth-day. Whit Sunday.
25 Monday	
26 Tuesday	
27 Wednesday	
28 Thursday	
29 Friday	
30 Saturday	
31 SUNDAY	

JUNE, 1885.

1 Monday	Exam's in Nor. School begin. Examinations for Certificate of Associate in Arts begin.
2 Tuesday	
3 Wednesday	Normal Shcool Committee.
4 Thursday	
5 Friday	
6 Saturday	
7 SUNDAY	
8 Monday	
9 Tuesday	
10 Wednesday	
11 Thursday	
12 Friday	
13 Saturday	
14 SUNDAY	
15 Monday	
16 Tuesday	
17 Wednesday	
18 Thursday	Declaration of results of school Examinations.
19 Friday	
20 Saturday	
21 SUNDAY	
22 Monday	Meeting Museum Committee.
23 Tuesday	Meeting of Library Committee.
24 Wednesday	Regular Meeting of Corporat'n.
25 Thursday	Report of Normal School.
26 Friday	Normal Sch. closes for Summer Vacation.
27 Saturday	Meeting of Governors.
28 SUNDAY	
29 Monday	
30 Tuesday	

JULY, 1885.

1 Wednesday	
2 Thursday	
3 Friday	
4 Saturday	
5 SUNDAY	
6 Monday	
7 Tuesday	
8 Wednesday	
9 Thursday	
10 Friday	
11 Saturday	
12 SUNDAY	
13 Monday	
14 Tuesday	
15 Wednesday	
16 Thursday	
17 Friday	
18 Saturday	
19 SUNDAY	
20 Monday	
21 Tuesday	
22 Wednesday	
23 Thursday	
24 Friday	
25 Saturday	
26 SUNDAY	
27 Monday	
28 Tuesday	
29 Wednesday	
30 Thursday	
31 Friday	

AUGUST, 1885.

1 Saturday	
2 SUNDAY	
3 Monday	
4 Tuesday	
5 Wednesday	
6 Thursday	
7 Friday	
8 Saturday	
9 SUNDAY	
10 Monday	
11 Tuesday	
12 Wednesday	
13 Thursday	
14 Friday	
15 Saturday	
16 SUNDAY	
17 Monday	
18 Tuesday	
19 Wednesday	
20 Thursday	
21 Friday	
22 Saturday	
23 SUNDAY	
24 Monday	
25 Tuesday	
26 Wednesday	
27 Thursday	
28 Friday	
29 Saturday	
30 SUNDAY	
31 Monday.	

EXAMINATIONS.—1884-85.

FACULTY OF APPLIED SCIENCE.

CHRISTMAS, 1884.

The days of the several Examinations will be announced by the Faculty during the Session.

SESSIONAL, 1885.

Mar.	DAYS.	FIRST YEAR.	SECOND YEAR.	THIRD YEAR.	FOURTH YEAR.
30	Mond.	Free Hand Drawing.	Descript'e Geometry	Descript'e Geometry	Mineralogy (adv.)
31	Tues.		Materials and Practical Chemistry.	Materials and Practical Chemistry.	Materials.
Apr. 1	Wed.		Essay.	Essay.	Essay.
2	Thur		Exp. Physics.	Exp. Physics.	
3	Frid.	} Vacation.			
4	Satur.				
6	Mond.				
7	Tues.		Exp. Physics.	Exp. Physics.	Applied Mechanics.
8	Wed.	French.	French.	Applied Mechanics.	
9	Thur.	Chemistry.	Chemistry.	Applied Mechanics.	App. Mechanics, Geology (adv.)
10	Frid.	English.	English.	English.	
11	Satur.	Practical Chemistry.	Railway Work.	Mining, Railway Work.	Machinery and Millwork, Railway Work.
13	Mond.		Mechanism.	Mineralogy & Geology.	App. Mechanics, Assaying.
14	Tues.	Mathematics.	Mathematics.	Mathematics.	Applied Mechanics.
15	Wed.		Mineralogy.	Surveying.	
16	Thur.		German.	French.	Hydraulics.
17	Frid.	German.	Botany.	Mechanical Work.	
18	Satur.	Mathematics.	Mathematics.	Mathematics.	Steam.
20	Mond.			Ap. Mechan's (ad.) German.	Ap. Mechanics (ad.)
21	Tues.	Mathematics.	Mathematics.	Mathematics.	Geology (adv.)
[illegible]	Wed.		Theoretical Chem.		Mechanical Work. Steam (adv.)
[illegible]	Thur.		Mechanical Work, Surveying.		
[illegible]	Frid.				Hydraulics (adv.), Geology (adv.)
25	Satur.				
27	Mond.				
28	Tues.				
29	Wed.	Results declared.			
[illegible]	Thur.	Convocation.			

EXAMINATIONS.—1884-85.

FACULTY OF ARTS.

CHRISTMAS, 1884.

The days of the several Examinations will be announced by the Faculty during the Session.

SESSIONAL AND HONOUR, 1885.

Mar. / Ap'l.	DAYS.	FIRST YEAR.	SECOND YEAR.	THIRD YEAR.	B.A. HONOURS. FOURTH YEAR.
1	Wed.	Greek.	Greek.	Math. Physics.	Ethics.
2	Thur.	Latin.	Latin.	Math. Physics.	Ethics.
3	Fri.	Good Friday } Vacation.			
4	Sat.				
5	Sun.	Easter-day.			
6	Mon.				
7	Tues.	Greek and Roman History.	Latin Prose Comp.	Exp'l Physics.	Exp'l Physics.
8	Wed.	French.	French.	Metaphysics.	Modern History.
9	Thur.	Chemistry.	English.		B.A. Honours.
10	Fri.	English.		Greeek.	Math. Physics.
11	Sat.				
12	Sun.				
13	Mon.		Mathematics.	Latin.	Math. Physics.
14	Tues.	Mathematics.	Mathematics.	Latin Prose Comp.	Geology.
15	Wed.	Mathematics.	Hebrew and German	Zoology.	Greek.
16	Thur.	Hebrew.		French.	Latin.
17	Fri.	German.	Botany.	English.	Greek and Roman History.
18	Sat.				
19	Sun.				
20	Mon.		Logic.	German & Hebrew.	French, German, Hebrew.
21	Tues.				B.A. Honours.
22	Wed.				
23	Thur.	Honour Exams.	Honour Exams.	Honour Exams.	B.A. Honour Ex.
24	Fri.	Honour Exams.	Honour Exams.	Honour Exams.	B.A. Honour Ex.
25	Sat.				
26	Sun.				
27	Mon.				
28	Tues.				
29	Wed.	Results declared.			
30	Thur.	Convocation.			

Faculty of Arts.

THE PRINCIPAL (Ex-officio).

Professors :—LEACH (*Emeritus*).
DAWSON.
MARKGRAF.
JOHNSON.
CORNISH.

Professors :—DAREY.
MURRAY.
HARRINGTON.
MOYSE.

Dean of the Faculty :—Ven. ARCHDEACON LEACH, D.C.L., LL.D.
Vice-Dean :—ALEXANDER JOHNSON, LL.D.
Honorary Librarian :—Professor CORNISH, LL.D.

[CONTENTS.—*Matriculation*, &c., § I. ; *Exhibitions*, &c., § II. ; *Course of Study*, § III. ; *Examinations, Degrees*, &c., § IV. ; *Exemptions*, &c., § V. ; *Medals*, &c., § VI. ; *Licensed Boarding Houses*, § VII. ; *Attendance and Conduct*, § VIII. ; *Library*, § IX. ; *Peter Redpath Museum*, § X. ; *Fees*, &c., § XI. ; *Courses of Lectures*, § XII.]

The next Session of this Faculty will commence on September 23rd, 1884, and will extend to May 1st, 1885.

§ I. MATRICULATION AND ADMISSION.

1. UNDERGRADUATES.—Candidates for Matriculation as Undergraduates are required to present themselves to the Vice-Dean of the Faculty on the 23rd of September, for examination ; they may, however, enter after the commencement of the Session, if, on examination, found qualified to join the classes.

(*a.*) The subjects of examination for entrance into the First Year are Classics, Mathematics and English.

Examination for Entrance into the First Year.

In Classics.—Greek.—Xenophon, Anabasis, Book I. ; or, Homer, Iliad, Book I. ; Greek Grammar.

Latin.—Cicero, Orations I. and II. against Catiline ; or, Virgil, Æneid, Book I. ; Latin Grammar.

In Mathematics.—Arithmetic ; Algebra, to Simple Equations, inclusive ; Euclid's Elements, Books, I., II., III.

In English.—Writing from Dictation. A paper on English Grammar *including Analysis.* A paper on the leading events of English History.

An equivalent amount of other books or other authors in Latin and Greek than those named may be accepted by the Examiners.

[Associates in Arts who, at their special Examination, have passed in Latin, Greek, Algebra and Geometry, are not required to present themselves for the Matriculation Examination.]

An *Advanced Examination* in any one or more of the subjects of the First Year will be held for such of the candidates as desire it. Candidates who pass creditably in this will be entitled to such exemption from the Lectures and from the Christmas Examinations of the First Year as the Faculty may determine. For the Advanced Examination in Classics two authors in Latin and two in Greek will be required, and the books fixed (see below) must be taken.

Candidates for the Advanced Examination must send notice to the Vice-Dean of their intention before the day of Examination, stating the subjects of the First Year and the extent of reading in each they purpose to submit.

Partial or Occasional Students (see below) in the First Year, who pass the April Sessional Examinations in one or more subjects will, if Candidates for Undergraduate standing in the First Year in the following September, be allowed to count these as Advanced Examinations under the above rule.

The *Courses in some of the subjects for Advanced Matriculation* are as follows :—

Classics.

Greek.—Xenophon, Anabasis, Book I. ; Homer, Iliad, Book VI.

Latin.—Cicero, Orations I. and II. against Catiline ; Virgil, Æneid, Book II.

A paper on Greek and Latin Grammar, and Latin Prose Composition (Text-book, Smith's Principia Latina, Part IV.)

Mathematics.

Candidates who pass a satisfactory Examination in the Arithmetic and Euclid of the First Year (see course for entrance into second year) will be exempt from lectures up to Christmas and from the Christmas Examination.

Candidates who, in addition to the above, pass a satisfactory Examination in Algebra and Trigonometry, will be exempt from lectures altogether in these subjects in the First Year.

English.

Candidates who pass a satisfactory Examination on Morley's First Sketch of English Literature, Celtic period to Elizabethan period (inclusive), will be exempted from the lectures on literature during the First Year.

(*b*) Candidates not matriculated in the University, or Partial Students of the First Year, may be admitted to the standing of students of the Second Year, provided that they pass the Sessional Examinations of the First Year, or an Examination in the following subjects at the beginning of the Second Year :—

Examination for Entrance into the Second Year.

In Classics.—*Greek.*—Homer, Iliad, Book VI. ; Xenophon, Anabasis, Book I. ; Grammar and Prose Composition.

Latin.—Virgil, Æneid, Book VI. ; Cicero, Orations IV. against Catiline ; Grammar and Prose Composition.

[An equivalent amount of other books or other authors in Latin and Greek than those named above may be accepted by the Examiners for entrance into the Second Year.]

In Mathematics.—

Euclid.—Books I., II., III., IV., VI., with defs. of Book V. (omitting Propositions 27, 28, 29, of Book VI.)

Algebra.—To end of Quadratic equations. (Colenso's Alg.)

Trigonometry.—Galbraith and Haughton's Trigonometry, Chaps. 1, 2, 3, 4, 6, to beginning of numerical solution of plane triangles.

Arithmetic.—Elementary rules, Proportion, Interest, Discount, &c., Vulgar and Decimal Fractions, Square Root.

In English Literature.—Writing from Dictation, English Grammar, including Analysis, English Composition, British History (Collier).

In French.—French Grammar ; or (instead of French) *German*—in which knowledge sufficient to enable the Candidate to join the regular class will be required.

In Chemistry.—The Chemistry of the non-metallic elements, or of the more common metals.

[*Note.*—Candidates unable to pass in French or German are not excluded ; but they are required to begin German, and to continue the study of it for two years. Candidates unable to pass in Chemistry are required to attend such of the lectures in the subjects as are open to them, and to pass an examination at the end of the second year.]

(*c*) *Students of other Universities* may be admitted, on the production of Certificates, to a like standing in this University, after examination by the Faculty.

2. PARTIAL STUDENTS.—Candidates for Matriculation as Partial Students, taking three or more Courses of Lectures, will be examined in the subjects necessary thereto, as may from time to time be determined by the Faculty.

3. OCCASIONAL STUDENTS.—Persons desirous of taking one or two Courses of Lectures, as Occasional Students, may apply to the Vice-Dean for entry in his Register, and may procure from the Secretary tickets for the Lectures they desire to attend.

Note.—Every Student is expected to present, on his entrance, a written intimation from his parent or guardian of the name of the minister of religion under whose care and instruction it is desired that the Student shall be placed, who will thereupon be invited to place himself in communication with the Faculty on the subject. Failing such intimation from his parent or guardian, the Faculty will endeavour to establish befitting relations.

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§ II. SCHOLARSHIPS AND EXHIBITIONS.

GENERAL REGULATIONS.

1. A Scholarship is tenable for *two* years. An Exhibition for *one* year.

2. Scholarships are open for competition to Students who have passed the University Intermediate Examination, provided that not more than three Sessions have elapsed since their Matriculation; and also to Candidates who have obtained what the Faculty may deem equivalent standing in some other University.

3. Scholarships are divided into two classes :—[1] *Science* Scholarships; [2] *Classical and Modern Language* Scholarships. The subjects of Examination for each are as follows :—

Science Scholarships.—Differential and Integral Calculus; Analytic Geometry; Plane and Spherical Trigonometry; Higher Algebra and Theory of Equations; Botany; Chemistry; Logic.

Classical and Modern Language Scholarships.—Greek; Latin; English Composition; English Language, Literature, and History; French.

4. Exhibitions are assigned to the First and Second Years.

First Year Exhibitions are open for competition to candidates for entrance into the First Year.

Second Year Exhibitions are open for competition to Students who have passed the First Year Sessional Examinations, provided that not more than two Sessions have elapsed since their Matriculation; and also to candidates for entrance into the Second Year.

The subjects of Examination are as follows :—

First Year Exhibitions.—Classics, Mathematics, English.

Second Year Exhibitions.—Classics, Mathematics, English Language and Literature, Chemistry, French.

5. The First and Second Year Exhibition Examinations will, for Candidates who have not previously entered the University, be regarded as Matriculation Examinations.

6. No student can hold more than one Exhibition or Scholarship at the same time ; but four of the first Year Exhibitioners will be granted exemption from the Sessional fees throughout their College Course, under Presentation Scholarships from the Governor General. (See below.)

7. Exhibitions and Scholarships will not necessarily be awarded to the best answerers at the Examinations. Absolute merit will be required.

8. If in any one College Year there be not a sufficient number of Candidates showing absolute merit, any one or more of the Exhibitions or Scholarships offered for competition may be transferred to more deserving Candidates in another year.

9. A successful Candidate must, in order to retain his Scholarship or Exhibition, proceed regularly with his College Course to the satisfaction of the Faculty.

10. The annual income of the Scholarships or Exhibitions will be paid in four instalments, viz. :—In October, December, February and April, about the 20th day of each month.

11. The Examinations will be held at the beginning of every Session.

There are at present fifteen Scholarships and Exhibitions :—

THE JANE REDPATH EXHIBITION, founded by Mrs. Redpath, of Terrace Bank, Montreal :—value $100 yearly.

THE MCDONALD SCHOLARSHIPS AND EXHIBITIONS, ten in number, founded by W. C. McDonald, Esq., Montreal :—value, $125 each yearly.

THE CHARLES ALEXANDER SCHOLARSHIP, founded by Charles Alexander, Esq., Montreal, for the encouragement of the study of Classics and other subjects ; —value, $120 yearly.

THE GEORGE HAGUE EXHIBITION, for the encouragement of the study of Classics, value $125 yearly, given by George Hague, Esq., Montreal, for four years, beginning with the Session 1881-2.

THE MAJOR H. MILLS SCHOLARSHIP founded by bequest of the late Major Hiram Mills. Value $100 yearly. (By order of the Board of Governors this will be reserved in the session 1884-5).

AN EXHIBITION given by Dr. Johnson for the year 1884-5 value, $100.

EXHIBITIONS AND SCHOLARSHIPS OFFERED FOR COMPETITION AT THE OPENING OF THE SESSION, SEPT., 1884.

To Students entering the First Year, Three Exhibitions of $125, *and one of* $100.

Subjects of Examination :—

Greek.—Homer, Iliad, bk. IV.; Xenophon, Anabasis, bk. II.; Demosthenes Olynthiacs, I. and II.

Latin.—Cicero, Cato Major; Livy, bk. IX., Chaps. 1-19; Virgil, Æneid, bk. V., vss. 1-361; Latin Prose Composition.

A paper on Greek and Latin Grammar.

Text-books.—Hadley's Elements of Greek Grammar. Arnold's Greek Prose Composition, Exercises 1 to 25. Dr. Wm. Smith's Smaller Latin Grammar, and Principia Latina, Part IV.

Mathematics.—Euclid, bks. I., II., III., IV.; Algebra to end of Harmonical Progression (Colenso); Arithmetic.

English.—English Grammar and Composition.—(Bain's Grammar as far as Derivation.) Special exercises in Grammar and Composition.

The First Year Exhibitions will be awarded to the best answerers in the above course, provided there be absolute merit.

But in subsequently distributing the Exhibitions of higher value among the successful candidates, answering in the following subjects will be taken into account also :—

1. A re-translation into Latin of an English version of some passage from one of the easier Latin Prose writers (for specimens see Smith's Principia Latina, Part V.).

2. Euclid, Book VI. (omitting Props. 27, 28, 29), with Defs. of Book V.

3. English :—An Examination upon one of Shakespeare's plays. For 1884—Julius Cæsar; for 1885—Coriolanus.

To Students entering the Second Year, Three Exhibitions of $125, *and one of* $100.

Subjects of Examination :—

Greek.—Homer, Iliad, bk. XVIII.; Xenophon, Hellenics, bk. I.; Herodotus, bk. III.; Chaps. 1 to 67.

Latin.—Virgil, Æneid, bk. VIII.; Horace, Odes, bk. III.; Livy, bk. XXII; Chaps. 1-23; Cicero, Select Letters (Pritchard and Bernard).

Greek and Latin Prose Composition.

A paper on Grammar and History.

Text-Books.—Dr. William Smith's History of Greece. Liddell's History of Rome. Hadley's Greek Grammar. Smith's Student's Latin Grammar, Arnold's Greek Prose Composition. Smith's Principia Latina, Parts V. and V.

Mathematics.—The Mathematics (Ordinary and Honour) of First Year.

English Literature.—Bain's Grammar. Shakespeare, *As You Like it.* Trench, *Study of Words.*

Chemistry.—Nichol's abridgment of Eliot and Storer's manual as far as p. 208

French.—Darey, Principes de Grammaire française. Lafontaine, les Fables, livres V. and VI. Molière, le Malade imaginaire.

To Students entering the Third Year, Four Scholarships of $125, *tenable for Two Years.*

One of these is offered in Mathematics and Logic, and one in Natural Science and Logic, as follows:—

1. *Mathematics.*—Differential Calculus (Williamson, Chaps. 1, 2, 3, 4, 7, 9; Chap. 12, Arts. 168-193 inclusive; Chap. 17, Arts. 225-243 inclusive). Integral Calculus (Williamson, Chaps. 1, 2, 3, 4, 5; Chap. 7, Arts. 126-140 inclusive; Chap. 8, Arts. 150-156 inclusive; Chap. 9, Arts. 168-176 inclusive). Analytic Geometry (Salmon's Conic Sections, subjects of Chaps. 1 to 13 (omitting Chap. 8), with part of Chap. 14. Hind's Plane and Spherical Trigonometry. Salmon's Modern Higher Algebra (first four chapters). Todhunter's Theory of Equations (selected course).

   Logic, as in Jevons' Elementary Lessons on Logic.

2. *Natural Science.—Botany*, as in Gray's Structural and Systematic Botany. *Canadian Botany*, including a practical acquaintance with all the orders of Phænogams and Acrogens. *Chemistry*, Nichol's abridgment of Eliot and Storer's manual of Chemistry.

   Logic, as in Jevons' Elementary Lessons on Logic.

Two will be given on an Examination in Classics and Modern Languages, as follows:—

Classics.—Greek.—Euripides, Medea; Demosthenes, the Olynthiacs; Xenophon, Hellenics, Book I.; Herodotus, Book VIII.; Thucydides, Book VI. *Latin.*—Horace, Satires, Book I., and Epistles, Book I.; Virgil, Georgics, Book I.; Terence, Adelphi; Tacitus, Annals, Book I.; Pliny, Select Letters (Pritchard and Bernard; Clarendon Press Series). Greek and Latin Prose Composition.

History.—Text-books.—Rawlinson's Manual of Ancient History; Smith's Students: Greece; Liddell's Rome.

English Language and Literature.—Spalding's English Literature (Chap., VI. Part III., to end of book); Shakespeare, Tempest; Milton, Paradise Lost; books I. and II.; Trench, Study of Words.

English Composition.—(High marks will be given for this subject, in order to encourage the practice of it, after the models of the best writers.)

French.—Racine, Britannicus; Molière, les Femmes savantes. French Grammar. Les Ecrivains célèbres de la France:—Bonnefon. Translation from English into French.

Classical Subjects for Exhibitions, September, 1885.

GREEK—*First Year.*

Homer, Iliad, bk. IV.; Xenophon, Anabasis, bk. V.; Demosthenes, Aphobus, I. and II.

LATIN.—*First Year.*

Cicero, Cato Major; Virgil, Æneid, bk. I., vss. 1-304; Livy, bk. IX., Chaps. 1-19.

GREEK.—*Second Year.*

Homer, Iliad. bk. XXII; Xenophon, Hellenics, bk. I.; Herodotus, bk. III., Chaps. 1 to 67.

LATIN.—*Second Year.*

Virgil, Æneid, bk. VI.; Horace, Odes, bk. I.; Livy, bk. XXII. Chaps. 1-23; Cicero, Select Letters (Pritchard and Bernard.)

English Subjects for Exhibitions, etc., September, 1885.

First Year.—English Grammar and Composition. (Bain's Grammar as far as Derivation). Shakespeare, *Coriolanus.*

Second Year.—Bain's Grammar.—Shakespeare, *As You Like It.* Trench, *Study of Words.*

Third Year.—Spalding's English Literature (cap. VI., Part III., to end of book.) Shakespeare, *Tempest.* Milton, *Paradise Lost*, books I. and II. Trench, *Study of Words.*

EXEMPTIONS FROM FEES UNDER PRESENTATION SCHOLARSHIPS, &c.

A number of these are in the gift of Benefactors, and entitle the Students holding them to exemption from the Sessional Fees in the Faculty of Arts. Sixteen have been placed by the Governors at the disposal of His Excellency the Governor-General. Candidates must past the usual Matriculation Examination.

[By command of His Excellency, four of these Exemptions will be offered for competition in the First Year Exhibition Examinations of the ensuing session.]

Eight Exemptions from fees may be granted by the Board of Governors, from time to time to the most successful students who may present themselves as candidates. By order of the Board one of these is given annually to the *Dux* of the High School of Montreal, and one to the Dux of any other Academy or High School sending up, in one year, three or more candidates competent to pass creditably the Matriculation Examination.

In the event of any Academy or High School in the Province of Quebec offering for competition among pupils an Annual Bursary in the Faculty of Arts, of not less than $80, the Governors will add the amount of the fees of tuition thereto.

An Exemption from fees may be given annually to any teacher holding the Model School or Academy Diploma of the McGill Normal School, recommended by the Principal and Professors of the School, and passing creditably the Matriculation Examination in Arts.

§ III. COURSE OF STUDY.

1. Undergraduates are arranged according to their standing, as Students of the First, Second, Third or Fourth Year. They are required to attend all the courses of Lectures and pass the examinations appointed for their several years, under the Regulations of the Faculty as to attendance and conduct; the only exceptions are those in favour of Honour and Professional Students, stated in § V.

ORDINARY COURSE FOR THE DEGREE OF B.A.

First Year.—Classics; French or German; English Grammar and Literature; Pure Mathematics; Elementary Chemistry.

Second Year.—Classics; French or German; English Literature; Elementary Psychology and Logic; Pure Mathematics; Botany.

Third Year.—Latin or Greek; Mathematical Physics (Mechanics and Hydrostatics); any two of the following departments—French or German (whichever the Student has taken in the first two years); Experimental Physics*; Zoology; English and Rhetoric; together with one *Additional Department*, for which see below.

Fourth Year.—Latin or Greek (same language as in Third Year); Mathematical Physics (as in Third Year, or Astronomy and Optics; Mental and Moral Philosophy; any two of the following departments—French or German (same language as in previous years); Experimental Physics*; Geology; History; and one *Additional Department* (the same as chosen in the Third Year), for which see below.

* Students claiming exemptions (see §V) cannot take Experimental Physics if they have not taken the Third Year Mathematical Physics.

(N.B. The *Additional Departments* referred to above, of which one must be selected, the same department being taken in both the third and fourth years, are as follows, viz.:—(1) Classics, including Latin and Greek. (2) Mathematical Physics, including Optics with Astronomy. (3) Natural Science, including Chemistry, Mineralogy, Geology of Canada. (4) Mental and Moral Philosophy. (5) English with History. (6) One Modern Language (or Hebrew).

A Student cannot, in general, take the "Additional" Department in any subject unless he takes the "Ordinary" Department in the same subject; but in the Third Year, a Student taking English and Rhetoric, may take either English or Mental and Moral Philosophy as his "Additional" Department.

Undergraduates are required to study either French or German for two years (viz.. in the First and Second Years), taking the same language in each year. Any Student failing to pass the Examination at the end of the Second Year will be required to pass a Supplemental Examination, or to take an additional Session in the Language in which he has failed. In addition to the obligatory, there are other lectures, attendance on which is optional.

Students who intend to join any Theological School, on giving written notice to this effect at the beginning of the First Year, may take Hebrew instead of French or German.

Undergraduates who have been previously Partial or Occasional Students, and have in that capacity attended a particular Course or Courses of Lectures may, at the discretion of the Faculty, be exempted from further attendance on these Lectures, but no distinction shall in consequence be made between the Examinations of such Undergraduates and of those regularly attending Lectures.

2. At the Examination for the Degree of B.A., Honours are given in the following subjects, for which special Honour Courses are provided:—[For details see under § XII.]

1. *Classical Languages and Literature.*
2. *Mathematics and Physics.*
3. *Mental and Moral Philosophy.*
4. *English Language, Literature and History.*
5. *Geology and other Natural Science.*
6. *Modern Languages with History (Lansdowne Medal Course).*

Honours are given in the above subjects in the Third Year also, and in Mathematics in the First and Second Years as well.

Candidates for Honours are allowed exemptions under conditions stated in § V.

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§ IV. EXAMINATIONS.

COLLEGE EXAMINATIONS.

For Students of McGill College only.

1. There are two Examinations in each year; one at Christmas and the other at the end of the Session. In each of these the students who pass are arranged according to their answering as 1st Class, 2nd Class, and 3rd Class.

In the Fourth Year only, the University Examination for B.A. takes the place of the Sessional Examination.

2. Students who fail in any subject in the Christmas Examinations are required to pass a Supplemental Examination in that subject before admission to the Sessional Examinations.

3. Students who fail in one subject in the Sessional Examinations of the first two years are required to pass a Supplemental Examination in it. Should they fail in this, they will be required in the following Session to attend the Lectures and pass the Examination in the subject in which they have failed, in addition to those of the Ordinary Course, or to pass the Examination alone without attending Lectures, at the discretion of the Faculty.

4. Failure in two or more subjects at the Sessional Examinations of the first two years, or in one subject in the Third Year Sessional examinations, involves the loss of the Session. The Faculty may permit the Student to recover his standing by passing a Supplemental Examination at the beginning of the ensuing Session. For the purpose of this Regulation, Classics and Mathematics are each regarded as two subjects.

5. The time for the Supplemental Examination will be fixed by the Faculty; and such Examination will not be granted at any other time, except by special permission of the Faculty, and on payment of a fee of $5.

UNIVERSITY EXAMINATIONS.

For Students of McGill College and of Colleges affiliated in Arts.

I. FOR THE DEGREE OF B.A.

There are three University Examinations:—The *Matriculation*, at entrance; the *Intermediate*, at the end of the Second Year; and the *Final*, at the end of the Fourth Year.

1. The subjects of the Matriculation Examination are stated in Section 1.

2. In the Intermediate Examination the subjects are Classics and Pure Mathematics, Logic, and the English Language, with one other Modern Language, or Botany. Theological Students are allowed to take Hebrew instead of a Modern Language. The subjects for the Examination of 1885 are as follows:—

Classics.—Greek.—Isocrates.—Panegyricus.
Latin.—Horace.—Epistles, Book I.
Latin Prose Composition.

Mathematics. Arithmetic.

Euclid, Books I., II., III., IV., VI., and defs. of Book V.

Algebra, to Quadratic Equations, inclusive.

Trigonometry, including use of Logarithms.

Logic.—Jevons' Elementary Lessons in Logic.

English.—Spalding's History of English Literature or Lectures (see course). A paper on the essentials of British History (Collier).

With one of the following :—

1. *Botany and Vegetable Physiology.*—Structural and Systematic Botany, as in Gray's Text-Book, omitting the Descriptions of the Orders.
2. *French.*—C. Delavigne :—Les Enfants d'Edouard. Racine :—Phèdre. Les Ecrivains célèbres de la France :—XVI. and XVII. cent. Translation into French :—Rasselas.

   Grammatical questions.
3. *German.*—Schmidt's German Guide ; Adler's Reader (selections from secs. 3 and 4); Translation into German.
4. *Hebrew.*—Grammar. Translation from Genesis, chap. I. ; Exodus, chap. XX. ; Deuteronomy, chap. XXXII.—Exercises :—Hebrew into English, and English into Hebrew.

3. For the Final Examination the subjects are those appointed as compulsory in the Third and Fourth Years, viz. ; Latin or Greek ; Mathematical Physics (Mechanics and Hydrostatics) or Astronomy and Optics ; Mental and Moral Philosophy ; and those departments (two "Ordinary" and one "Additional") which the Candidate may have selected for himself in the Third and Fourth Years. See § III.

The subjects in detail for 1885 are as follows :—

Classics.

1. *Greek.*—Herodotus, Book IX. ; Æschylus, Prometheus Vinctus. Greek History. (Or Latin as follows) :—
2. *Latin.*—Tacitus, Annals, Book I. ; Juvenal, Satires VIII. and X. Roman History.

   * In Classics Greek may be reckoned as the Additional Department by students taking Latin as their Ordinary subject, and, vice versa, Latin by students taking Greek.

Mathematical Physics.

1. Mechanics and Hydrostatics, as in Galbraith & Haughton's text-books.
2. Optics and Astronomy.

* Astronomy and Optics may be reckoned as the Additional Department by Students taking Mechanics and Hydrostatics as their ordinary subject, and vice versa, Mechanics and Hydrostatics by Students taking Astronomy and Optics.

Mental and Moral Philosophy.

Calderwood's Handbook of Moral Philosophy (omitting the Historical Sketch, pp. 43-76), and Rogers' Manual of Political Economy.

* Lectures, with Schwegler's History of Philosophy Chaps. 23-45 (inclusive), and Lorimer's Institutes of Law.

Natural Science.

Mineralogy and Geology, as in Dana's Manuals and Dawson's Lecture Notes.

* Advanced Mineralogy and Lithology, with Geology of Canada or Practical Chemistry as in § XII.

Experimental Physics.

1. *Electricity, Magnetism and Sound* (see Courses of Lectures § XII).

History.

History.—Freeman :—General sketch of European History ; Bryce's Holy Roman Empire (omit Chaps. VI., VIII., IX., XIII., and Supplementary Chapter).

* As in § XII.

French.

The Course of French for the Fourth Year.

* The subjects of the Additional Department as in § IX.

German.

Schiller, Geschichte des dreissigjährigen Krieges (First two books) Wallenstein ; Goethe, Iphigenie auf Tauris ; General paper on Grammar ; Translation into German, and German Prose Composition.

* German Literature as in § XII.

Hebrew. (Theological Students only.)

Hebrew Grammar ; Translation from Ecclesiastes, chaps. I., II., III., XII. —Job, chaps. I., IV., XIV.—Reading of the Masoretic Notes.

* The Chaldee and Syriac Languages, as in § XII.

* Additional Departments, one of which is to be selected by each candidate.

For details of each subject, see Courses of Lectures, § XII.

At the B.A. Ordinary Examination of those Candidates who obtain the required aggregate of marks, only those who pass in the First Class in three of the Departments and not less than Second Class in the remainder, shall be entitled to be placed in the First Class for the Ordinary Degree.

II. FOR THE DEGREE OF M.A.

1. Candidates are required to prepare and submit to the Faculty of Arts, not less than two months before proceeding to the degree, a Thesis on some Literary or Scientific subject previously approved by the Faculty.

The last day in the present session for sending in Theses for M.A. will be Jan. 30th, 1885.

2. All candidates, except those who have taken First Rank B.A. Honours, or have passed First Class in the Ordinary Examinations for the Degree of B. A., are required to pass an Examination, also, either in Literature or in Science, as each Candidate may select.

(*a.*) The subjects of the Examination in *Literature* are divided into two groups :

A.—1. Latin, 2. Greek. 3. Hebrew.

B.—1. French. 2. German. 3. English.

(*b.*) The subjects for the Examination in *Science* are divided into three groups :—

A.—1. Pure Mathematics (Advanced or Ordinary.) 2. Mechanics (including Hydrostatics.) 3. Astronomy. 4. Optics.

B.—1. Geology and Mineralogy. 2. Botany. 3. Zoology. 4. Chemistry.

C.—1. Mental Philosophy. 2. Moral Philosophy. 3. Logic. 4. History of Philosophy.

(*c.*) Every Candidate in Literature is required to select two subjects out of one group in the Literary section, and one out of the other group in the same section for the Examination. Every Candidate in Science is required to select two out of the three groups in the Scientific section ; and in one of the groups so chosen to select two subjects, and in the other group one subject for Examination.

(*d.*) One of the subjects selected as above will be considered the principal subject, and the other two as subordinate subjects.

For further details of the Examination application must be made to the Faculty before the above date. For Fees see § XI.

III. DEGREE OF LL.D.

Every Candidate for the Degree of LL.D. in Course is required to prepare and submit to the Faculty of Arts, not less than three months before proceeding to the degree, twenty-five printed copies of a Thesis on some Literary or Scientific subject previously approved by the Faculty, and possessing such a degree of Literary or Scientific merit, and evidencing such originality of thought or extent of research as shall, in the opinion of the Faculty, justify it in recommending him for that degree.

Every Candidate for the Degree of LL.D. in Course is required to submit to the Faculty of Arts, with his Thesis, a list of books, treating of some one branch of Literature or of Science, satisfactory to the Faculty, in which he is prepared to submit to examination, and on which he shall be examined, unless otherwise ordered by vote of the Faculty. For Fees see § XI.

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§ V. SPECIAL PROVISIONS FOR CANDIDATES FOR HONOURS AND FOR PROFESSIONAL STUDENTS.

I. Candidates for Honours in the Second Year.

Candidates for Honours in the Second Year who have obtained Honours in the First Year may omit the lectures and examinations in either a Modern Language (or Hebrew) or Botany, giving notice of the subject at the beginning of the session.

II. Candidates for Honours in the Third Year.

The following are the "Ordinary" Departments of the Third Year, the study of four of which is, in general, compulsory (see § III.) :—Latin or Greek; French or German (or Hebrew); Mechanics and Hydrostatics; Experimental Physics* ; Zoology ; English Literature and Rhetoric.

Every Candidate for Honours in the Third Year must, in order to obtain exemptions, have passed the Intermediate Examination, and must in the Sessional Examination of the Second Year have taken first class in the subject in which he proposes to compete for Honours; such candidates shall be entitled in the Third Year to exemption from lectures and examinations in any one of the four "Ordinary" departments required by the general rule, except that in which he is a Candidate for Honours. A Candidate for Honours in the Third Year who has failed to obtain Honours shall be required to take the same examinations for B.A. as the ordinary undergraduates.

III. Candidates for B.A. Honours.

The following are the "Ordinary" Departments of the Fourth Year, in which courses of lectures are delivered: attendance on four of these courses, in distinct departments, is in general required:—Latin or Greek; Astronomy and Optics; French or German or Spanish (or Hebrew); Mental and Moral Philosophy; Experimental Physics*; Geology and Mineralogy; History.

A Student who has taken Honours of the first rank in the Third Year, and desires to be a Candidate for B.A. Honours, shall be required to attend two only of the above courses of lectures, and to pass the two corresponding examinations only at the ordinary B.A. Examination. The "additional department" required for the ordinary B.A. (see § IV.) forms part of the Honour course. A Student who has taken Second Rank Honours in the Third Year and desires to be a Candidate for B.A. Honours in the same subject shall be allowed to continue in the Fourth Year the study of the same departments that he has taken in the Third Year, but shall be required to take the same number of departments as in the Ordinary course.

IV. Professional Students.

Students of the Third and Fourth Years, matriculated in the Faculties of Law, Medicine or Applied Science of the University, or in any affiliated Theological College, are entitled to exemption from the Additional Department or any one of the Ordinary Departments required in the Third and Fourth years. (For rule concerning "Special Certificates" see § VI.)

To be allowed these privileges in either year they must give notice at the commencement of the Session to the Dean of the Faculty of their intention to claim exemptions as Professional Students, and must produce at the end of the Session certificates of attendance on a full course of Professional Lectures during the year for which the exemptions are claimed.

V. Students of Affiliated Theological Colleges.

1. Such Students, whether entered as Matriculated or Occasional, are subject to the regulations of the Faculty of Arts in the same manner as other students.

2. The Faculty will make formal reports to the Governing body of the Theological College to which any such Students may belong, as to:—[1] their conduct and attendance on the classes of the Faculty; and [2] their standing in the several examinations; such reports to be furnished after the Christmas and Sessional Examinations severally, if called for.

3. Matriculated Students are allowed no exemptions in the course for the degree of B.A. until they have passed the Intermediate Examination; but they may take Hebrew in the First and Second Years, instead of French and German.

4. In the Third and Fourth Years they are allowed exemptions, as stated above.

* Any Student who, under any of the above rules, desires to take Experimental Physics, is required to take Mechanics and Hydrostatics also, in the Third Year.

§ VI. MEDALS, HONOURS, PRIZES AND CLASSING.

1. GOLD MEDALS will be awarded in the B.A. Honour Examinations to Students who take the highest Honours of the First Rank in the subject stated below, and who shall have passed creditably the Ordinary Examinations for the Degree B.A. :—

The *Henry Chapman Gold Medal*, for the Classical Languages and Literature.

The *Prince of Wales Gold Medal*, for Mental and Moral Philosophy.

The *Anne Molson Gold Medal*, for Mathematics and Natural Philosophy.

The *Shakespeare Gold Medal*, for the English Language, Literature and History.

The *Logan Gold Medal*, for Geology and other Natural Sciences.

In the event of there being no Candidate for any Medal, or of none of the Candidates fulfilling the required conditions, the Medal will be withheld, and the proceeds of its endowment for the year may be devoted to prizes in the subjects for which the Medal was intended. For details, see announcements of the several subjects below.

2. HONOURS, of First or Second Rank, will be awarded to those Matriculated Students who have successfully passed the Examinations in any Honour Course established by the Faculty (*N.B.—The Honour Course includes the Additional Department in each subject*), and have also passed creditably the ordinary Examinations in all the subjects proper to their year.

(*N.B.—By a recent Order of the Lieutenant-Governor of Ontario in Council, Honours in this University confer the same privileges in Ontario as Honours in the Universities of that Province, as regards certificates of eligibility for the duties of Public School Inspectors, and as regards exemption from the non-professional Examination of Teachers for First-Class Certificates for Grades "A and B."*)

3. SPECIAL CERTIFICATES will be given to those candidates for B.A. who shall have been placed in the First Class at the ordinary B.A. Examination. At this examination no candidate who has taken exemptions (see § V.) can be placed in the First Class unless he has obtained First Class in each of the departments in which he has been examined.

4. CERTIFICATES of High General Standing will be granted to those Matriculated Students who are placed in the First Class in the aggregate of the Studies proper to their year.

5. PRIZES OR CERTIFICATES to those Matriculated Students who may have distinguished themselves in the studies of a particular class, and have attended all the other classes proper to their year.

6. His Excellency the MARQUIS OF LANSDOWNE has been pleased to offer a GOLD MEDAL for the encouragement of the study of Modern Languages and Literature, with History.

The Regulations are as follows :—

1. The Subjects for competition shall be French and German together with the History part of the present Honour Course for the Shakespeare Medal.

2. The course of study shall extend over two years, viz., the Third and Fourth years.

3. The successful Candidate must be capable of speaking and writing both languages correctly.

4. There shall be examinations in the subjects of the course in both the Third and Fourth years, at which Honours may be awarded to deserving Candidates.

5. The general conditions of competition, and the privileges as regards exemptions, shall be the same as for the other Gold Medals in the Faculty of Arts.

6. Students from other Faculties shall be allowed to compete, provided they pass the examinations of the Third and Fourth Years in the above subjects.

7. Candidates desiring to enter on the Third Year of the Course, who have not obtained First Class standing at the Intermediate or Sessional Examinations of the Second Year in Arts, are required to pass an examination in the work of the first two years of the course in Modern Languages, if called on to do so by the Professors.

8. The subjects of Examination shall be as follows :

I. FRENCH.—*Third Year.*

Racine :—Phèdre ; Les Plaideurs.
Boileau :—L'Art Poétique.
Pascal :—Les Pensées.
La Bruyère :—Les Caractères.
Ampère :—Formation de la Langue française.

In addition to the ordinary and additional course as stated in the Calendar.

Fourth Year.

Molière :—Le Misanthrope.
Corneille :—Cinna.
La Rochefoucauld :—Les Maximes.
Montaigne :—Les Essais.
Auguste Brachet :—Grammaire historique.
Etudes des Anciens textes français (Demogeot).

In addition to the ordinary and additional course as stated in the Calendar

II. GERMAN.—*Third Year.*

Wieland,—Oberon.

Schleicher,—Die Deutsche Sprache (History of the German Language.)

History of German Literature from 1750, being a critical review of the principal writers of the classical period. The men of 'Sturm und Drang.' The Romantic Schools. Modern Lyric Poets. (Gostwick and Harrison's Outlines.)

With the Additional Department prescribed for this year.

Fourth Year.

A special study of Goethe's 'Faust' (Part I.)

Selections from Heine's Lyrical Poems.

Schleicher,—Die Deutsche Sprache.

German Literature from 1150 to 1350:—Mediæval classic writers—Epic, Lyric and Didactic Poetry—(Kurz, Leitfaden zur Geschichte der deutchen Litteratur).

With the Additional Department prescribed for this year (excepting 'Moschzisker').

III. HISTORY.—(*See Honour Course for Shakespeare Medal.*)

The competitive Examination of the Fourth Year will include the work of both the Third and Fourth Years.

7. THE NEIL STEWART PRIZE of $20 is open to all Undergraduates of this, and also to Graduates of this or any other University, studying Theology in any College affiliated to this University, under the following rules:—

1. The prize will not be given for less than a thorough examination in Hebrew Grammar passed in the First Class, in reading and translating the Pentateuch and such poetic portions of the Scripture as may be determined.

2. In case competitors should fail to attain the above standard the prize will be withheld, and a prize of Forty Dollars will be offered in the following year for the same.

[Course for the present year:—Hebrew Grammar (Gesenius); Translation and analysis of the first ten chapters of Genesis; the Prophet Habbakuk (the whole book); and the first five Psalms.

3. There will be two Examinations of three hours each; one in Grammar and the other in Translation and Analysis.

This Prize, founded by the late Rev. C. C. Stewart, M.A., and terminated by his death, has been re-established by the liberality of Neil Stewart, Esq., of Vankleek Hill, and will be offered for competition next Session.

8. (*a*) EARLY ENGLISH TEXT SOCIETY'S PRIZE.—This Prize, the annual gift of the Early English Text Society, will be awarded for proficiency in (1) Anglo-Saxon, (2) Early English before Chaucer.

The subjects of Examination will be :—

(1) *The lectures of the Third and Fourth Years on Anglo-Saxon.*

2. *Specimens of Early English* (*Clarendon Press Series, ed. Morris and Skeat,*) *Part II., A.D.* 1298—*A.D.* 1393. *The Lay of Havelok the Dane* (*Early English Text Society ed. Skeat*).

(*b*) NEW SHAKESPEARE SOCIETY'S PRIZE. This Prize, the annual gift of the New Shakespeare Society, will be awarded for a critical knowledge of the following plays of Shakespeare :—

Hamlet ; Macbeth ; Othello ; King Lear.

9. The names of those who have taken Honours, Certificates, or Prizes will be published in order of merit ; with mention, in the case of Students of the First and Second Years, of the Schools in which their preliminary education has been received.

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§ VII. LICENSED BOARDING-HOUSES.

(*Regulations for Students in Arts, passed by the Corporation, April,* 1875.)

1. All Students under 21 years of age, not residing with parents or guardians, nor belonging to a Theological College, shall reside in licensed boarding-houses, unless they produce written authority from parents or guardians to reside elsewhere.

2. Persons applying for a license to keep a boarding-house shall produce evidence satisfactory [to the Principal as to their character and fitness, and the suitability of the house for the health and comfort of the Students. They shall also supply him with a statement of charges.

3. The keeper of the boarding-house shall report immediately to the Principal the entrance or departure of any Student, and any instance of immortality or disorderly conduct.

§ VIII. ATTENDANCE AND CONDUCT.

All Students shall be subject to the following regulations for attendance and conduct :—

1. A Class-book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted; and the said Class-book shall be submitted to the Faculty at all their ordinary meetings during the Session.

2. Each Professor shall call the roll immediately at the beginning of a lecture. Credit for attendance on any lecture may be refused on the grounds of lateness, inattention or neglect of study, or disorderly conduct in the Class-room. In the case last mentioned, the Student may, at the discretion of the Professor, be required to leave the Class-room. Persistence in any of the above offences against discipline after admonition by the Professor shall be reported to the Dean of Faculty. The Dean may, at his discretion, reprimand the Student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from Classes.

3. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

4. While in the College, or going to or from it, Students are expected to conduct themselves in the same orderly manner as in the Class-rooms. Any Professor observing improper conduct in the College buildings or grounds may admonish the Student, and, if necessary, report him to the Dean.

5. Every Student is required to attend regularly the religious services of the denomination to which he belongs, and to maintain without as well as within the walls of the College a good moral character.

6. When Students are brought before the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, impose fines, disqualify from competing for prizes and honours, suspend from Classes, or report to the Corporation for expulsion.

7. Any Student who does not report his residence on or before Nov. 1st in each year is liable to a fine of one dollar.

8. Any Student injuring the furniture or buildings will be required to repair the same at his own expense, and will, in addition, be subject to such other penalty as the Faculty may see fit to inflict.

9. All cases of discipline involving the interest of more than one Faculty, or of the University in general, shall be immediately reported to the Principal, or, in his absence, to the Vice-Principal.

[NOTE.—All Students are required to appear in Academic dress while in or about the College buildings.]

§ IX. LIBRARY.

Extracts from the regulations.

1. The Books in the Library are classed in two divisions :—1st, Those which may be lent ; and 2nd, those which may not, under any circumstances, be removed from the Library. The classification shall be determined by the Librarian.

2. Students in the Faculty of Arts or of Applied Science, who have paid the Library-fee, may borrow books on depositing the sum of $5 with the Bursar, which deposit, after the deduction of any fines due, will be repaid at the end of the Session on the certificate of the Assistant Librarian that the books have been returned uninjured.

3. Students may borrow not more than three volumes at one time, except on the recommendation in writing of a Professor for specified books ; and must return them within two weeks, on penalty of a fine of 5 cents a volume for each day of detention. An additional deposit of $4 entitles a student to borrow two extra volumes.

4. A Student incurring fines beyond the sum-total of $1 shall be debarred the use of the Library until they have been paid.

5. Any volume, or volumes, lost or damaged by any person shall be replaced, or paid for at such rates as the Library Committee may direct ; and such rate of payment shall be determined by the value of the book itself, or of the set to which the volume belongs.

6. Graduates in any of the Faculties, on making a deposit of $5, are entitled to the use of the Library, subject to the same rules and conditions as Students ; but they are not required to pay the Annual Library-fee.

7. Members of the McGill College Book Club, on presenting annually a certificate of their membership, are by a special regulation of Corporation entitled to the use of the Library on the same conditions as Graduates, but they are not required to make a deposit.

8. Students in the Faculties of Law and Medicine, who have paid the Library-fee to the Bursar, may read in the Library, and on depositing the sum of $5 with the Bursar, may borrow books on the same conditions as Students in Arts. They are required to present their Matriculation Tickets to the Bursar and to the Librarian, or Assistant Librarian.

9. Persons not connected with the College may consult Books in the Library on obtaining an order from any of the Governors, or from the Principal, or the Dean of the Faculty of Arts or of Applied Science, or from any of the Professors in the said Faculties. Donors of books or money to the amount of Fifty Dollars may at any time consult books on application to the Librarian.

10. The Library is kept open from 9 a.m. to 4 p.m., daily, and no person shall be allowed in the Library except during these hours.

11. No person, other than the Librarian and his assistants, is allowed to enter the alcoves, or to take down books from the shelves, except Members of Corporation, and Professors, or those whom any of the above may accompany personally.

12. A person desiring to read or to borrow a book, which he has ascertained from the Catalogue to be in the Library, will fill up one of the blank forms provided for Readers and Borrowers respectively, and hand it to the Assistant Librarian who will thereupon procure him the book.

13. Readers must return the books they have obtained to the Assistant Librarian before leaving the Library.

14. No conversation is permitted in the Library.

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§ X. PETER REDPATH MUSEUM.

1. The Museum will be open every lawful day from 9 a.m. till 5 p.m., except when closed for any special reason by order of the Principal or Committee.

2. Students will obtain tickets of admission from the Principal on application.

3. Students will enter by the front door only, except when going to lectures.

4. Any Student wilfully defacing or injuring specimens, or removing the same, will be excluded from access to the Museum for the Session.

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§ XI. FEES.

Matriculation Fee for the First Year (to be paid in the Year of Entrance only)..... $4 00

For the Second Year (exigible from Students who enter in the Second Year, and also from those who have failed in the First Year and re-enter in the Second Year on Examination)..... 6 00

Sessional Fee..... 20 00

Library Fee..... 4 00

Gymnasium Fee..... 2 50

Undergraduates are required to pay all the above fees.

Partial Students, viz., those taking three or more Courses of Lectures, are required to pay the Matriculation, Library and Gymnasium Fees, and $5 for each Course which they attend, or $20 for all the courses.

Occasional Students taking one course of Lectures only, are required to pay $5 per Session for that course.

Occasional Students taking two courses of Lectures are required to pay the Library Fee and $5 for each course.

The Matriculation, Library, and Gymnasium Fees are exigible from Students holding exemptions from Sessional Fees.

Graduates in Arts are allowed to attend, without payment of fees, all lectures except those noted as requiring a special fee.

The fees must be paid to the Secretary and the tickets shown to the Vice-Dean within a fortnight after the commencement of attendance in each session. In case of default, the Student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty and on payment of a fine of $2.

[All fines are applied to the purchase of books for the Library.]

Fee for the Degree of			*B.A*	$ 5 00
"	"	"	*M.A*	10 00
"	"	"	*LL.D*	50 00

If the Degree of M.A. be granted, with permission to the Candidate, on special grounds, to be absent from Convocation, the fee is.....$25.00

The B.A. fee must be paid before Examination.

The M.A. fee must be sent to the Secretary of the University at the same time that the Candidate sends his Thesis to the Dean of the Faculty. This is a condition essential to the reception of his application.

A Bachelor of Arts or Master of Arts, intending to proceed to a higher Degree, is required, in addition to the above, to keep his name on the books of the University, by the annual payment of a fee of $2 to the Registrar of the University (which payment suffices also for Registration under Chap. III. of the Statutes of the University). He may, if he prefer it, compound for the above Annual fees, by the payment of $6 in one sum for the Master's Degree, or $30 for the Doctor's Degree, on or before the date of application for the Degree.

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§ XII. COURSES OF LECTURES.

I. ORDINARY COURSE.

1. CLASSICAL LITERATURE AND HISTORY.

(Major H. Mills Professorship of Classics.)

Professor, Rev. G. Cornish, M.A., LL.D.

Greek.

First Year.—Xenophon.—Hellenics, Book I.
Second Year.—Isocrates.—Panegyricus.
Third Year.—Lysias.—Contra Eratosthenem.
Æschylus.—Prometheus Vinctus.
Fourth Year.—Herodotus.—Book IX.

LATIN.

First Year.—VIRGIL.—ÆNEID, Book VI.
CICERO.—EPISTOLAE SELECTAE.
Latin Prose Composition.

Second Year.—HORACE.—EPISTLES, Book I.
TACITUS.—GERMANIA, Chaps. I.-XXVII.
Latin Prose Composition.

Third Year.—JUVENAL.—SATIRES VIII. and X.
PLAUTUS.—AULULARIA.
Latin Prose Composition.

Fourth Year.—TACITUS.—ANNALS, Book I.
Latin Prose Composition.

In the work of the Class the attention of the Student is directed to the collateral subjects of History, Antiquities and Geography; also to the grammatical structure and affinities of the Greek and Latin Languages; and to Prosody and Accentuation.

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2. ENGLISH LANGUAGE AND LITERATURE.

(MOLSON PROFESSORSHIP.)

Professor, CHAS. E. MOYSE, B.A.

First Year.—English Language and Literature. Three Lectures a week.
The Lectures on Language exemplify the more important features in the history of English: Exercises on Analysis are given in once a week. The Lectures on Literature comprise the period between the Celts and Wordsworth. Students who have leisure will be advised as to their reading.

Second Year.—A period of English Literature, and one Play of Shakespeare.
One Lecture a week before Christmas; two Lectures a week after Christmas.
During the Session of 1883-4, the Chief Poets and Prose writers of the Victorian period will form the subject of the Lectures. Shakespeare—*Tempest.*

Third Year.—Chaucer's Prologue to Canterbury Tales.
Lecture once a week.
Text-Book, Chaucer's Prologue, &c., Ed. Morris.

Additional Department.—Early English—Morris and Skeat, extt. I.-IX. inclusive.
Milton; Comus; Areopagitica.
Burke—Thoughts on Present Discontents; Reflections on French Revolution.
History—Bryce's Holy Roman Empire, as on page 31.

Fourth Year.—History.

The Lectures will be a sketch of general European History from the fall of the Roman Empire to the end of the Eighteenth Century.

Additional Department.—Anglo-Saxon; Earle's Introduction.
Spenser—Faerie Queene, Book I.
Pope—Essay on Criticism, Essay on Man.
Tennyson—In Memoriam.
History—Buckle, Hist. of Civ. in England, 4 caps.

(The Lectures of the Additional Department in each year are comprised in the Honour Lectures.)

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3. MENTAL AND MORAL PHILOSOPHY.

(JOHN FROTHINGHAM PROFESSORSHIP OF MENTAL AND MORAL PHILOSOPHY.)

Professor, REV. J. CLARK MURRAY, LL.D.

Second Year.—First Term.—Elementary Psychology. Second Term.—Logic.

Third Year.—*Additional Department.*—Advanced Logic and Psychology, leading to a discussion of the controversy between Idealism and Empirical Evolutionism. Text-books: Mill's System of Logic (Books I., II., III.), and Murray's Outline of Hamilton's Philosophy.

Fourth Year.—First term.—The Psychological Basis of Ethics. Second Term.—Ethics Proper, comprising the elementary principles of Jurisprudence and Political Science. *Additional Department.*—Modern Philosophical Systems.

In the Third and Fourth Years Students are also required to write occasional Essays on Philosophical Subjects.

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4. FRENCH LANGUAGE AND LITERATURE.

Professor, P. J. DAREY, M.A., B.C.L.

First Year.—DAREY, Principes de Grammaire française.
LA FONTAINE, Les Fables, livres V. et VI.
MOLIERE, Les Fourberies de Scapin.
Dictation. Colloquial exercises.

Second Year.—DAREY, Principes de Grammaire française.
C. DELAVIGNE, Les Enfants d'Edouard.—RACINE, Phèdre.
Translation into French.—DR. JOHNSON, Rasselas.
BONNEFON.—Les Ecrivains célèbres de la France of the XVIth and XVIIth centuries.
Dictation. Parsing. Colloquial exercises.

Third Year.—PONSARD, l'Honneur et l'Argent.
Cogery :—Third French course.
Translation into French ; Macaulay, Warren Hastings.
French Composition. Dictation.
BONNEFON, Les Ecrivains célèbres de la France au XVIIIe siècle,

Additional Department.—LA FONTAINE, Les Fables.
RACINE, Les Plaideurs.
PAUL ALBERT, Littérature du XVIIe siècle.
Translation into French : GOLDSMITH, The Vicar of Wakefield.

Fourth Year.—Cogery :—Third French course.
BONNEFON—Les Écrivains modernes de la France.
Translation into French :—Macaulay, Warren Hastings.
French Composition. Dictation.

Additional Department.—MOLIERE, Le Misanthrope.
AUG. BRACHET, Grammaire historique.
PAUL ALBERT, depuis le commencement de la langue française jusqu'au XVIIe.
EMILE SOUVESTRE.—Un Philosophe sous les toits.
Translation into French :—As you like it.

The Lectures in the Third and Fourth Years are given in French.

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5. GERMAN LANGUAGE AND LITERATURE.

Professor, C. F. A. MARKGRAF, M.A.

I. Ordinary Course.

First and Second Years.—Schmidt's German Guide (1st, 2nd, and part of 3rd Course) ; Adler's Progressive German Reader (Selections from Sections 1-5) ; Translations, oral and written. Exercises in Parsing.

Third and Fourth Years.—Schmidt's German Guide (3rd part cont.) ; Whitney's Grammar (excerpts) ; Chamisso, Peter Schlemihl ; Lessing, Minna von Barnhelm ; Schiller, Wallenstein ; History of German Literature from the earliest periods to the close of the 18th century (a brief survey by the Professor) ; Translation into German ; German Prose Composition.

II. Additional Department.

Third Year.—Whitney's German Grammar ; Schiller, Wilhelm Tell ; Tieck, Genoveva ; Koerner, Leyer und Schwert ; History of German Literature (as in the Ordinary Course) ; Translation from English Prose writers.

Fourth Year.—Whitney's Grammar (cont.); Goethe, Iphigenie auf Tauris; Lessing, Nathan der Weise; Schiller, Geschichte des dreissigjährigen Krieges; Moschzisker's Guide to German Literature (Epoch VII., Sections I.-VI.; 1750-1850); Translation from English writers; German Prose Composition.

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6. HEBREW AND ORIENTAL LITERATURE.

Professor Coussirat, B.A.; B.D.

Elementary Course.—(*For Students of the First and Second Years*).—Grammar;—Text-Book, J. Robert, Wolf's Practical Hebrew Grammar, with exercises in orthography and etymology; Reading; Translation and Grammatical Analysis of Historical portions of the Scriptures—Syntax—Mishlé Shualim—Fables, &c.

Advanced Course.—(*For Students of the Second, Third and Fourth Years.*) Introduction to the Study of Hebrew Poetry—its spirit and characteristics. Lowth and Sarchi as Text-Books. Translation from the Psalms, Job, Ruth, and Isaiah Ancient compared with Modern Hebrew Poetry; the productions of Halevi, Gabirol, &c. Grammar (Gesenius Hebrew Grammar), Exercises, &c., continued.

Additional Department (*Optional*) *:—for Third and Fourth Years.*

The Chaldee Language:—Riggs' Grammar and Translation.

The Chaldee portions of Scripture. Targum of Onkelos and T. Yerushalmi.

The Syriac Language:—Grammar (Uhlemann's) and Translation.

The course comprises Lectures on the above Languages and their Literature in particular, with a general notice of the other Oriental Languages, their genius and peculiarities. Comparative Philology, affinity of Roots, &c., also receives due attention, while the portions selected for translation will be illustrated and explained by reference to Oriental manners, customs, history, &c.

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7. MATHEMATICS AND NATURAL PHILOSOPHY.

(Peter Redpath Professorship of Natural Philosophy).

Professor, Alexander Johnson, M.A., LL.D.

(In the work of the First Year assistance will be given by G. H. Chandler, M.A., Lecturer in Mathematics in the Faculty of Applied Science.)

Mathematics.—(*First Year*)—Arithmetic.—Euclid, Books 1, 2, 3, 4, 6, with Definitions of Book 5 (omitting propositions 27, 28, 29, of Book 6), Todhunter's Edition—Colenso's Algebra (Part I.) to end of Quadratic Equations.—Galbraith and Haughton's Plane Trigonometry to beginning of solution of Plane Triangles.

MATHEMATICS.—(*Second Year*)—Arithmetic, Euclid, Algebra, and Trigonometry as before.—Nature and use of Logarithms.—Remainder of Galbraith and Haughton's Plane Trigonometry.

The course for the Intermediate University Examination consists of the Mathematics for the first two years.

MATHEMATICAL PHYSICS.—(*Third Year*)—Galbraith and Haughton's Mechanics, viz., *Statics*, First 3 chapters, omitting sec. 5, chapter I., and sect. 21, chapter II. ; *Dynamics*, subjects of the First 5 chapters. Galbraith and Haughton's Hydrostatics.

Additional Department.—Optics (Galbraith and Haughton). Descriptive Astronomy (Lockyer's Elementary Astronomy, English edition ; First three chapters, viz., The Stars and Nebulæ ; The Sun ; The Solar System). Students are recommended to use with this an "Easy Guide to the Constellations," by Gall.

ASTRONOMY.—(*Optional.*)—(*Fourth Year*)—Galbraith and Haughton's Astronomy—The lectures on this subject will be given before Christmas. This, with Optics, forms the Additional Department for the Fourth Year, (see note on B. A. Examination.)

EXPERIMENTAL PHYSICS.—(*Third and Fourth Years*)—1.—*Light.*—Theories —Reflection.—Refraction.—Dispersion.—Interference and Diffraction.—Double Refraction.—Polarization. 2.—*Heat.*—Dilatation of Solids, Liquids and Gases.—Specific and Latent Heat.—Radiation and Conduction.—Mechanical Theory of Heat. 3.—*Electricity*—Statical and Dynamical :—including Electro-Magnetism—Magneto-Electricity—Thermo-Electricity—Diamagnetism—Electric Measurements —Practical Application to Telegraph, &c. 4.—*Magnetism.* 5.—*Sound.*—Theory of Undulations—Production and Propagation of Sound—Vibrations of Strings Rods and Plates—Vibrations of Fluids—Musical Sounds. Text-Books :—Ganot's Treatise translated by Atkinson. This Course extends over two years.

The Subjects for the Session 1884-85 are Electricity, Magnetism, and Sound.

The Lectures in Mathematical and Experimental Physics will be illustrated by Apparatus, of which the College has a very good collection.

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8. GEOLOGY AND NATURAL HISTORY.

(LOGAN PROFESSORSHIP OF GEOLOGY.)

Professor, J. W. DAWSON, LL.D., F.R.S., F.G.S.

B. J HARRINGTON, B.A., Ph. D., F.G.S., Assistant Professor of Geology.

D. P. PENHALLOW, B.Sc., Lecturer on Botany.

BOTANY.—(*Second Year.*)—Vegetable Histology and Organography. Nutrition and Reproduction of Plants. Classification. Descriptive Botany. Flora of Canada. Notices of Palæobotany and Geographical Botany.

Text-Book.—Gray or Bessey.

[A prize of $20 will be given by the Professor for the best collection of plants and the greatest proficiency in their determination. The prize collections or duplicates of them to remain in the College Museum. Candidates must be students in Botany of the previous session.]

ZOOLOGY AND PALÆONTOLOGY. (*Third Year.*)—Elements of Animal Physiology. Classification of Animals. Characters of the Classes and Orders of Animals, with Recent and Fossil Examples, taken as far as possible from Canadian Species.

Text-Book.—Dawson's Hand-book of Zoology, with books of reference.

MINERALOGY AND GEOLOGY.—(*Fourth Year.*)

1. *Mineralogy and Lithology.*—An elementary course in which attention is paid more particularly to such minerals and rocks as are important in Geology or useful in the Arts. (In the Session of 1884-5, Zoological Palæontology will be substituted for the Mineralogy).

2. *Stratigraphy, Chronological Geology and Palæontology.*—Data for determining the relative ages of Formations. Classification according to age. Fauna and Flora of the successive periods. Geology of British America.

Text-Books.—Dana's Manuals of Mineralogy and Geology, Dawson's Lecture Notes on Geology.

The Lectures in Natural History will be accompanied with Demonstrations in the Museum. Students in Natural History are also entitled to tickets of admission to the Museum of the Natural History Society of Montreal.

ADDITIONAL DEPARTMENT.—(*Third Year.*)

CHEMISTRY.—(*Theoretical Chemistry.*)—One lecture a week. (*Practical Chemistry.*)—Qualitative Analysis as in Jones' Junior Course of Practical Chemistry ; two afternoons a week.

GEOLOGY.—Museum Studies in Palæontology.

ADDITIONAL DEPARTMENT.—(*Fourth Year.*)

MINERALOGY AND LITHOLOGY.—Chemical and Physical characters of Minerals, including Crystallography, the methods of determining species, and Descriptive Mineralogy. Composition of Rocks and their structure on the small scale ; Classification of Rocks.

GEOLOGY.—Geology of British America. (Part of Honour Course.)

Or, instead of the above, the Student may take as the "Additional Department" in the Fourth Year, a course of Practical Chemistry, in continuation of that of the Third Year.

9. CHEMISTRY.

(DAVID J. GREENSHIELDS PROFESSORSHIP OF CHEMISTRY AND MINERALOGY.)

Professor, B. J. HARRINGTON, B.A., Ph.D.

First Year.—A Course of Lectures preparatory to the Course in Natural Science. The Lectures are illustrated by experiments, and treat of the Elementary Constitution of Matter, the laws of Chemical Combination by weight and volume, the Atomic Theory, Quantivalence, Chemical Formulæ and Equations, Chemical Affinity, characteristics of Acids, Bases and Salts, Compound Radicals, the preparation and properties of the non-metallic and metallic Elements and many of their compounds, &c. A few Lectures are also devoted to the consideration of some of the more important Organic Substances, including Starch, Sugars, the Vegetable Acids, Alcohol, Albumen, &c. During the Course attention is called, as far as possible, to the relations of Chemistry to the various manufacturing industries. The laboratory is supplied with the usual apparatus, including balances by Becker & Sons, spectroscope by Duboscq, oxy-hydrogen lamp and blowpipe, large gas-holders, &c.

Text-Book—Nichol's Abridgment of Eliot and Storer's Manual of Chemistry.

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10. METEOROLOGY.

Superintendent of Observatory, C. H. MCLEOD, Ma.E.

Instruction in Meteorological Observations will be given in the Observatory, at hours to suit the convenience of the senior students.

Certificates will be granted to those students who pass a satisfactory examination on the construction and use of Meteorological Instruments and on the general facts of Meteorology.

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11. ELOCUTION.

MR. JOHN ANDREW, Instructor.

Students are recommended by the Faculty to avail themselves of the Instructions of Mr. Andrew, who will make arrangements for evening classes to meet during the Session.

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12. GYMNASTICS.

MR. FREDERICK S. BARNJUM, Instructor.

The classes will meet at the University gymnasium, at hours to be announced at the commencement of the Session. The Wicksteed gold, silver and bronze medals (the gift of Dr. R. J. Wicksteed) are offered for competition to students of the graduating class, and to students who have had instruction in the gymnasium for two sessions, the gold medal to the former, the silver and bronze medals to the latter.

II. HONOUR COURSES.

I. CLASSICS.

B.A. HONOURS, BEING THE HONOUR COURSE FOR STUDENTS OF THE THIRD AND FOURTH YEARS.

Candidates for B.A. Honours in Classics will be examined in the following subjects ;—

I. GREEK.

Plato.—Republic, Books I. and II.
Aristotle.—The Poetics.
Herodotus.—Books VIII. and IX.
Thucydides.—Books VI. and VII.
Xenophon.—Hellenics, Books I. and II.
Hesiod.—Works and Days.
Æschylus.—Prometheus Vinctus.
" Seven against Thebes.
Sophocles.—Antigone.
Euripides.—Hippolytus.
Aristophanes.—The Frogs.
Pindar.—Olympic Odes.
Theocritus.—Idylls I. to VI.
Demosthenes.—De Corona.
Æschines.—Contra Ctesiphontem.

II. LATIN.

Livy.—Books XXI., XXII. and XXXIII.
Tacitus.—Annals, Books I. and II.
" Histories, Book I.
Virgil.—Æneid, Books I. to IV.
Plautus.—Aulularia.
Terence.—Adelphi.
Horace.—Satires, Book I.
Juvenal.—Satt. VIII. and X.
Persius.—Satt. V. and VI.
Cicero.—De Imperio Cn. Pompeii.
" De Officiis.

III. HISTORY OF GREECE AND ROME.

Text-Books :—

1. Grote's History of Greece.
2. Arnold's History of Rome.
3. Mommsen's History of Rome.
4. Mahaffy's History of Greek Literature.
5. Cruttwell's History of Roman Literature.
6. Cruttwell and Banton's Specimens of Roman Literature.
7. Donaldson's Theatre of the Greeks.

IV. COMPOSITION.

1. Composition in Greek and Latin Prose.
2. General paper on Grammar, History and Antiquities.

The Examination for B.A. Honours will extend over four days, in the morning from 9 to 12, and the afternoon from 2 to 5.

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2. MENTAL AND MORAL PHILOSOPHY.

The Lectures are devoted mainly to Ancient Philosophy in the Third Year, to Modern Philosophy in the Fourth. In addition to the Lectures, the Examination will comprise the first four of the following subjects in the Third Year, the last seven in the Fourth:—

1. Schwegler's History of Philosophy, Chapters 1-21 inclusive.
2. Cicero's De Natura Deorum.
3. Berkeley's Principles of Human Knowledge.
4. Thomson's Outlines of the Laws of Thought.
5. Aristotle's Nicomachean Ethics.
6. Descartes' Method and Meditations.
7. Spinoza's Ethics.
8. Watson's Philosophy of Kant in Extracts.
9. Mill's System of Logic.
10. Spencer's First Principles.
11. Maine's Ancient Law.

N.B.—The class-essays of candidates for honours are expected to display superior ability in the discussion of philosophical subjects.

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3. ENGLISH LANGUAGE, LITERATURE AND HISTORY.

The examination for Honours in the Third Year will be on the works in the following course:—

Language.—Anglo-Saxon.—The lectures of the Third Year.
Early English.—Specimens of Early English (Clarendon Press Series, ed. Morris and Skeat), Part II., extt. I.-IX. inclusive.

Literature.—Chaucer.—The Prologue to the Canterbury Tales, The Knight's Tale, The Nonne Prestes Tale (Clarendon Press Series, ed. Morris).
Spenser.—The Faërie Queene, Book I.
Milton.—Shorter English Poems; Aeropagitica (ed. Arber).
Dryden.—Annus Mirabilis; Hind and Panther; Absalom and Achitophel. The Preface to the "Fables."
Wordsworth.—Prelude (Moxon's edition).

History.—The lectures on Constitutional History.
Hallam.—Middle Ages, caps. 1, 3, 5, 8, 9.
Macaulay.—Vol. I., cap. 1.

Lectures on the Honour Subjects of the Third Year.

Language.—Anglo-Saxon.—The essentials of the Anglo-Saxon Language and Literature. Text-book—Sweet's Anglo-Saxon Reader (Clarendon Press Series).

Literature.—A course on some of the special Honour subjects.

History.—Honour students are required to attend the Ordinary course of lectures on History.

B.A. HONOUR COURSE.

For B.A. Honours, the examination will be on the following subjects :—

Language.—Anglo-Saxon—The Lectures of the Fourth Year.
Early English—Specimens of Early English (Clarendon Press Series, ed. Morris and Skeat), Part II., extt. X.-XX., inclusive.

Literature.—Shakespeare—Love's Labour's Lost, A Midsummer's Night's Dream, Hamlet, The Tempest.
Pope—Essay on Criticism, Essay on Man, Moral Essays.
Cowper—The Task.
Campbell—The Pleasures of Hope.
Shelley—Cenci, Adonais.
Tennyson—Idylls of the King, In Memoriam.
Matthew Arnold—Essays in Criticism (the first two).

History.—The lectures of the Fourth Year.
Hallam—Constitutional History, caps. 1, 5 to 14, inclusive.
Macaulay—Vol. I., caps. 2 and 3.

Lectures on the Honour Subjects of the Fourth Year.

Language.—Anglo-Saxon—Sweet's Anglo-Saxon Reader, and a portion of one of the longer Anglo-Saxon poems.

Literature.—A course on these special Honour subjects, viz. :—the four prescribed plays of Shakespeare and Modern Poetry, with special reference to Tennyson's Idylls of the King, and In Memoriam.

History.—Honour Students are required to attend the course of lectures on Constitutional History.

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4. MATHEMATICS AND PHYSICS.

MATHEMATICS.—(*First Year.*)—McDowell's Exercises on Modern Geometry, &c.—Wood's Algebra—Todhunter's Theory of Equations (selected course).

The Honour lectures in the First Year begin after Christmas. Candidates will be examined on the first half of McDowell's Exercises before admission to them.

MATHEMATICS.—(*Second Year*).—Hind's Plane and Spherical Trigonometry —Salmon's Conic Sections, chapters 1, 2, 3, 5, 6, 7, and 10 to 13, inclusive.—Williamson's Differential and Integral Calculus (selected course).

MATHEMATICAL PHYSICS.—(*Third Year.*)—Minchin's Statics (omitting Chapters 15 and 16).—Tait & Steele, Dynamics of a Particle, chapters 1 to 7, inclusive.—Besant's Hydromechanics, Chaps. 1, 2, 3, 5.—Walton's Mechanical Problems.—Parkinson's Optics.—Godfray's Astronomy.

B.A. HONOUR COURSE.

PURE MATHEMATICS.—Williamson's Differential and Integral Calculus.—Boole's Differential Equations (selected course).—Salmon's Geometry of three Dimensions (selected course).

MECHANICS.—Minchin's Statics, except last chapter.—Tait & Steele, Dynamics of a Particle.—Routh's Dynamics of a Rigid Body (selected course). Besant's Hydromechanics.—Walton's Mechanical Examples.

PHYSICAL ASTRONOMY.—Godfray's Lunar Theory, or Cheyne's Planetary Theory.

Newton's Principia, Lib. I., Sects. 1, 2, 3, 9, and 11.

LIGHT.—Lloyd's Wave Theory of Light.

ELECTRICITY AND MAGNETISM.—Ordinary Course and Maxwell's Elementary Electricity.

HEAT, ACOUSTICS, } As in ordinary course.

Engineering students may be candidates for Honours.

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5. NATURAL HISTORY AND GEOLOGY.

THIRD YEAR.

(1) *Mineralogy:*—Crystallography. Physical and Chemical Properties of Minerals. Blow-pipe Analysis and Determinative Mineralogy. Description of species important as constituents of Rocks.

(2) *Lithology:*—Classes of Rocks, Texture and Composition. Description of the more commonly occurring Rocks.

(3) Directions for collection and study in the vacation.

B.A. HONOUR COURSE.

(1) *Mineralogy and Lithology:*—Description of Species, with particular reference to the Economical Minerals of Canada. Calculation of Mineralogical Formulæ, Quantivalent Ratios, &c. Description of Rocks; Microscopic Examination of Minerals and Rocks.

Lectures in the Undergraduate Course in the Faculty of Arts.

SESSION OF 1884–85.

	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
FIRST YEAR.	9	Classics.	† Mathematics. (*b*)	English.	† Mathematics. (*b*)	Mathematics.
	10	Mathematics.	Classics.	Classics.	Classics.	Classics.
	11	English.	* French.	* French.	* French.	English.
	12	Elementary Chemistry.	* German. * Hebrew.	Mathematics.	* German. * Hebrew.	Elementary Chemistry.
SECOND YEAR.	9	* French.	Logic.	* French.	* German.	* French.
	10	Classics.	Botany. (*d*)	Logic.	Botany. (*d*)	* German. † Mathematics.
	11	Mathematics.	Classics.	† Mathematics. Botany.	Classics.	Classics.
	12	† Mathematics. Botany.	* German. (*c*)	English.	* German. (*c*)	Logic.
THIRD YEAR.	9	English Literature.	Classics.	† Classics. † Math. Phy.	Classics.	† Classics. † English. (*e*) †Geol
	10	German. † Math. Physics	French. † Ment. Phil.	† Anglo Saxon. (*e*)	French.	Rhetoric.
	11	† Mental Philosophy.	Zoology	Physics [Mathematical].	Zoology.	Physics [Mathematical].
	12	Mental Philosophy. (*e*)	⁂ Physics. [Experimental].	Mental Philosophy. (*e*)	⁂ Physics [Experimental].	† Mathematical Physics.
	1		Hebrew.	Ment. Phil. (alternate weeks)	Hebrew.	German.
FOURTH YEAR.	9	† Geology.	Astronomy. (*a*)	† Classics. Geology.	Astronomy. (*a*)	Classics.
	10	Geology.	† M. Phy. French. † M. Ph.	English Literature. (*e*)	† Math. Phys. † Mental Phil.	Geology.
	11	Classics.	German.	Classics. † Geology.	† English. German. † Geology.	French. Anglo-Saxon
	12	† English. Moral Phil.	Moral Phil.	† Math. Physics.	Moral Phil.	and Early English.
	1		⁂ Physics [Experimental].		⁂ Physics [Experimental]. Hebrew.	German.

(*a*) During First Term. (*b*) Second Term. (*c*) For beginners entering 2nd Year. † For Candidates for Honours. (*d*) For Medical and Occasional Students.
* The Student may take at his option French or German in the First two years, or, if a Theological Student, Hebrew. ⁂ From Nov. 1st.
Classes at 1 p m. may be changed to other hours.
(*e*) Additional Department.
Library open every day, 9 to 4. The Museum will be open as arranged by the Professor of Natural History.
Determinative Mineralogy, Wednesday, at 2 p.m Practical Chemistry, Monday and Thursday, at 2 p.m. Theoretical Chemistry (*e*), Friday, at 4 p.m.

Faculty of Applied Science.

THE PRINCIPAL *(ex-officio)*.

Professors :—	GIRDWOOD.	Associate Professors :—	DAWSON.
	HARRINGTON.		MARKGRAF.
	BOVEY.		JOHNSON.
	McLEOD.		DAREY.
Lecturer :—	CHANDLER.		MOYSE.

Dean of the Faculty :—HENRY T. BOVEY, M.A., C.E.

The Instruction in this Faculty is designed to afford a complete preliminary training of a Technical as well as Theoretical nature, to such Students as are preparing to enter any of the various branches of the Professions of Engineering and Surveying, or are destined to be engaged in Assaying, Practical Chemistry, and the higher forms of Manufacturing Art.

Four distinct Branches of study are established, viz.:—

(1).—Civil Engineering, (2).—*Mechanical Engineering, (3).—Mining Engineering, (4).—Practical Chemistry.

Each of these extends over four, or, under certain conditions, three years, and is specially adapted to the prospective pursuits of the Student.

The Third and Fourth Years in the different Branches are each divided into an Ordinary and an Advanced Course, as explained in Section III.

The Degrees conferred by the University upon such Undergraduates of this Department as shall fulfil the conditions and pass the Examination hereinafter stated, will be, in the first instance, "Bachelor of Applied Science," mention being made in the Diploma of the particular branch of study pursued; and, subsequently, the degree of "Master of Engineering" upon those who have pursued Branches 1, 2, or 3, and of "Master of Applied Science" upon those who have pursued Branch 4.

* See Note under § IX-II.

Examination for Land Surveyors:—Any Graduate in the Faculty of Applied Science, in the Course of Civil Engineering and Land Surveying, may have his term of apprenticeship shortened to one year for the profession of Land Surveyor in Quebec or Ontario, or for the profession of Dominion Land Surveyor. He must, however, pass the preliminary and final examinations before one of the Boards of Examiners. The former examination should be passed before entering the University, or during the First or Second Year of attendance.

Students in the Civil Engineering Course who at the beginning of their Fourth Year give notice to the Faculty of their intention to prepare for the Examination for Dominion Topographical Surveyors, will receive special preparation for that Examination, more especially in Spherical and Practical Astronomy and Geodesy, and may be exempted from the Steam Engine and Hydraulics, or from the Designing of the Fourth Year.

Partial Students may be admitted to the lectures and examinations in the above special work.

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§ I. MATRICULATION AND ADMISSION.

1.—Candidates for Matriculation must present themselves for examination on the 24th of September, 1884. They may, however, be admitted at a later period of the Session, upon special application, if qualified to take their places in the classes in progress.

For Entrance into the First Year, the subjects for examination will be :—

Mathematics—Arithmetic; Algebra, to end of Simple Equations; Euclid's Elements, Books I., II., III.

English.—Grammar (including Analysis) and composition.

Candidates in the School Examinations of the University, who have passed in Geometry, Algebra and English, may be received as matriculated Students in the First Year.

2.—*The full course will extend over a period of FOUR years, but Candidates may enter the SECOND year, and thus reduce the course to THREE years,* if competent to pass a satisfactory examination in the following subjects :—

Arithmetic.

Algebra.—To the end of Quadratics (as in Colenso's Algebra, Part I.).

Euclid,—Books I., II., III., IV., VI., and XI., and the definitions o Book V.

Plane Trigonometry.—Including solution of Triangles, and the use of Mathematical Tables.

Chemistry.—As in Nichol's Abridgment of Eliot and Storer's Manual.

English.—Grammar (including Analysis), composition and the leading facts of the History of England.

French or German.—(French Grammaire and easy translation. German as in Schmidt's German Guide, Part I., and easy translation.)

Candidates unable to pass in Chemistry, French or German, may be allowed by the Faculty to enter and take the First Year lectures on Chemistry and German.

Candidates who produce certificates of having already completed a portion of a course in some recognized School of Applied Science, may be admitted to an equivalent standing.

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§ II. MEDAL, EXHIBITIONS, AND PRIZES.

1. The Lansdowne Silver Medal (the gift of His Excellency The Right Honourable the Marquis of Lansdowne).

The Lansdowne Medal is open for competition to *fourth* year Students of the three courses of Civil, Mechanical and Mining Engineering. Candidates must take a first-class general standing in their Ordinary course, and the Medal will be awarded to the Student who stands *first* in the Advanced Course.

The following will be offered for competition at the opening of Session 1884-85 :—

(1).—The Scott Exhibition of $66 (founded by the Caledonian Society of Montreal in commemoration of the Centenary of Sir Walter Scott), to Students entering the *Third* Year, the subjects of examination being :—

(*a*).—The Summer Report. (*b*).—Macaulay's History of England, Vol. I., Cap. I. ; Sir Walter Scott's Lady of the Lake. (*c*).—Mechanism.

(2.)—A prize in books to the value of $25, presented by Leslie Skelton, Esq., for the best Summer Report.

(3).—A prize presented by W. W. Watson, Esq., to Students entering the *Fourth* Year, the subjects of examination being the *Trigonometry*, *Analytical Geometry* and *Calculus* of the Ordinary Course.

(4).—A prize presented by Prof Bovey to Students entering the *Third* Year, the subjects of examination being the *Trigonometry*, *Analytical Geometry* and *Calculus* of the Ordinary Course.

(5).—A prize of $25, presented by S. Greenshields, B.A., for the Mathematical subjects of the *Second* Year Matriculation, open to all Students entering the *Second* Year.

(6).—An Exhibition of $100, offered by J. H. Burland, B.A. Sc., to Students entering the *Second* Year, the subjects of examination being:—

(*a*).—Inorganic Chemistry. (*b*).—Elements of Organic Chemistry. (*c*).—Practical Chemistry.

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§ III. SPECIAL PROVISIONS.

1.—Partial Students may be admitted to the Professional Classes upon payment of special fees (§ VII).

2. Undergraduates in Arts may, if allowed by the Faculty of Arts, be admitted to the Professional Classes in Practical Science on payment of the fees for these classes.

3.—Students in Applied Science may, by permission of the Faculty, take the Honour Classes in the Faculty of Arts.

4.—Students who have passed the Intermediate in Arts and not lower than the Second Class in Mathematics, have the privilege of entering the Second Year in Applied Science, and will be exempted from one of the departments in the Third and Fourth Years in Arts.

5.—Undergraduates in Arts of the Second or Third Years, or Graduates of any University, entering the Faculty of Applied Science, may, at the discretion of the Professors, be exempted from such lectures in that Faculty as they may have previously attended as Students in Arts, but must pass all the examinations.

6.—Students who fail to obtain their Session, and who, in consequence repeat the Year, will not be exempted from examination in any of those subjects in which they may have satisfied the examiners, except by the express permission of the Faculty. Application for such exemption must be made at the commencement of the Session.

§ IV. COURSES OF STUDY FOR SESSION 1883-84.

A. ORDINARY COURSE.

FIRST YEAR.

Civil Engineering.	Mechanical Engineering.	Mining Engineering.	Practical Chemistry.
Arithmetic. Euclid.	Arithmetic. Euclid.	Arithmetic. Euclid.	Arithmetic. Euclid.
Algebra. Trigonometry.	Algebra. Trigonometry.	Algebra. Trigonometry.	Algebra. Trigonometry.
Geometrical Conics.	Geometrical Conics.	Geometrical Conics.	Geometrical Conics.
Solid Geometry.	Solid Geometry.	Solid Geometry.	Solid Geometry.
Descriptive Geometry. (Optional.)	Descriptive Geometry. (Optional.)	Descriptive Geometry. (Optional.)	Descriptive Geometry. (Optional.)
Freehand Drawing.	Freehand Drawing.	Freehand Drawing.	Freehand Drawing.
Chemistry.	Chemistry.	Chemistry.	Chemistry.
English.	English.	English.	English.
French or German.	French or German.	French or German.	French or German.

SECOND YEAR.

Mechanism.	Mechanism.	Practical Chemistry.	Practical Chemistry.
Materials.	Materials.	Mechanism.	
Surveying.	Surveying.	Surveying.	Descriptive Geometry.
Practical Hydraulics.	Practical Hydraulics.	Practical Hydraulics.	
Descriptive Geometry.	Descriptive Geometry.	Descriptive Geometry.	
Algebra.	Algebra.	Algebra.	
Analytical Geometry.	Analytical Geometry.	Analytical Geometry.	
Calculus.	Calculus.	Calculus.	
Mathematical Physics.	Mathematical Physics.	Mathematical Physics.	Mathematical Physics.
Experimental Physics.	Experimental Physics.	Experimental Physics.	Experimental Physics.
Zoology	Mechanical Work.	Zoology.	Botany.
English.	English.	English.	English.
French or German.	French or German.	French or German.	French or German.

THIRD YEAR.

Applied Mechanics.	Applied Mechanics.	Applied Mechanics.	Practical Chemistry.
Materials.	Materials.	Materials.	Theoretical Chemistry.
Surveying.	Machinery & Millwork	Mining.	Assaying.
Practical Hydraulics.	Practical Hydraulics.		Blowpipe Analysis.
Descriptive Geometry.	Descriptive Geometry.	Practical Chemistry.	Mineralogy.
Analytical Geometry.	Analytical Geometry.	Blowpipe Analysis.	
Calculus.	Calculus.	Descriptive Geometry.	
Sphl. Trigonometry.		Analytical Geometry.	
Practical Astronomy.		Calculus.	
Mathematical Physics.	Mathematical Physics.	Mathematical Physics.	Mathematical Physics.
Experimental Physics.	Experimental Physics.	Experimental Physics.	Experimental Physics.
Geology & Mineralogy.	Mechanical Work.	Geology & Mineralogy.	Zoology.
Modern Languages.†	Modern Languages.†	Modern Languages.†	Modern Languages.†

FOURTH YEAR.

Applied Mechanics.	Applied Mechanics.	Assaying.	Practical Chemistry.
Mathematics.	Mathematics.	Mathematics.	Metallurgy.
	Machinery & Millwork	Metallurgy.	Mineralogy.
Practical Hydraulics.	Metallurgy of Iron.	Geology (advanced).	Geology.
Railway Work.	Practical Hydraulics.	Mineralogy (advanced).	
Thermodynamics.	Thermodynamics.	Thermodynamics.	
		Hydraulics.	
Graphical Statics.	Graphical Statics.	Graphical Statics.	
Steam Engine.	Steam Engine.	Steam Engine.	
Materials.	Materials.	Materials.	
Designs.	Designs.	Designs.	
Estimates. Spec'ns.	Estimates. Spec'ns.	Estimates. Spec'ns.	
Modern Languages.*	Modern Languages.*	Modern Languages.*	Modern Languages.*

(1) During the summer recess the Students in the 2nd, 3rd and 4th years are to employ themselves in some practical work (Mechanical Engineering students in a work-shop), and they are also to prepare a report on such work, to be handed in not later than October 1st. Credit will be given for this Report (or Essay) in the subsequent Sessional Examinations.

(2) Students are not allowed to take subjects which do not form part of their course, without the sanction of the Faculty.

† English or French or German. * Modern languages not imperative in the Fourth Year.

☞ Refer to note on page 64.

B. ADVANCED COURSE.

THIRD YEAR.—The Higher Mathematics, Mathematical Physics and Applied Mechanics.

FOURTH YEAR.—The Higher portions of Applied Mechanics.

All Students must take the Ordinary Course.

Students who have passed a creditable Examination in the Mathematical subjects of the Second Year may enter the Advanced Course of the Third Year, and may be exempted from the Modern Languages of that Year.

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§ V. EXAMINATIONS.

I.—FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

There will be a Christmas Examination for Students of the First Year in all the Subjects, and for Students of the following years in Mathematics and in those subjects which they take in the Faculty of Arts. A Sessional Examination will be held at the end of each year.

Candidates for the Degree of Bachelor of Applied Science are liable to be examined:—

1. In all the subjects of the *Fourth* Year.
2. In the Applied Mechanics of previous years.
3. In the Pure Mathematics of previous years.

Mining Students may substitute Mining and Mineralogy for the Applied Mechanics of No. 2.

Practical Chemistry Students are exempted from Nos. 2 and 3 of the above, but are liable for a special Examination in Theoretical Chemistry, Experimental Physics, and Biology.

The General Classification for the Degree Examination will be under two heads, viz.:

1. Those who have received Honourable Mention, in order of merit.
2. Those who have satisfied the Examiners, in order of merit.

The degree Examination in Mathematics is to be held at the Christmas preceding the Final.

Certificates of merit may be given to such Students as take the highest places in the Degree Examinations.

Special Certificates may be given for proficiency in particular subjects.

Certificates may be given to Students who have passed the Special Courses added to the curriculum.

Students who take their Degree in one of the Courses provided by the Faculty of Applied Science may obtain credit in either of the remaining Courses by attending one or more subsequent Sessions, the necessary provision for which will be made.

II. FOR THE DEGREE OF MASTER OF ENGINEERING.

Candidates must be Bachelors of Applied Science of at least three years' standing, and must produce satisfactory certificates of having been engaged during that time upon *bona fide* work in either the Civil, Mechanical, or Mining Branch of Engineering.

They must pass with credit an Examination, which will extend over the general Theory and Practice of Engineering, in which papers will be set having special reference to that particular branch upon which they have been engaged during the three preceding years.

The Examination will be held once in each year, in the second week of the month of December, and will be partly written and partly *viva voce*.

Notice of the intention of a Candidate to offer himself at any Examination for this degree must be sent in, together with the necessary certificates and fees, not less than two calendar months before each Examination is to be held. The Faculty will notify the candidate whether his certificates are satisfactory.

III. FOR THE DEGREE OF MASTER OF APPLIED SCIENCE.

Candidates must be Bachelors of Applied Science of at least three years' standing, must present certificates of having been employed during that time in some branch of scientific work, and must pass with credit an Examination in the Theory and Practice of those branches of scientific work in which they may have been engaged. The other conditions as under the last heading.

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§ VI. ATTENDANCE AND CONDUCT.

The regulations under this head are in all respects the same as those in force for Undergraduates in Arts.

§ VII. LIBRARY AND MUSEUM.

Students in this Department have the same privileges with reference to the Library and Museum as Undergraduates in Arts.

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§ VIII. FEES.

In the Course of Civil Engineering.—$45; Library, $4. In all $49 for each Session.

In the Course of Mechanical Engineering.—$45; Library, $4. In all $49 for each Session.

In the Course of Mining Engineering.—1st Year, $45; 2nd, 3rd and 4th Years, $55; Library, $4. In all $49 to $59 for each Session.

In the Course of Chemistry.—1st Year, $45; 2nd, 3rd and 4th Years, $55; Library, $4. In all $49 to $59 for each Session.

Matriculation Fee, for the First Year (to be paid in the year of entrance only), $4; for the Second Year (exigible from Students who enter in the Second Year, and also from those who have failed in the First Year, and re-entered the Second Year on Examination) $6.

Fee for Degree of Bachelor of Applied Science.—$10.

Fee for Degree of Master of Engineering or Master of Applied Science.—$25.

If the degree of M. A. Sc. be granted with permission to the Candidate, on special grounds, to be absent from convocation, the fee is $40.

The fees must be paid to the Secretary, and the tickets shown to the Dean within a fortnight after the commencement of attendance in each session. In case of default, the Student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty and on payment of a fine of $2.

The B.A. Sc. fee must be paid before the Examination.

Laboratory Students are required to purchase their own chemicals, &c. The larger articles of apparatus will be supplied by the Laboratory, the Students being responsible for breakage.

Partial Students may be admitted to the Professional Classes in any year, by payment of the ordinary fees for that year; or they may attend the lectures on any subject by payment of a fee of $5 for each term,* except in the case of Chemistry, for which a fee of $10 for each term is required.

Graduates in the Faculty of Applied Science may take further courses on payment of half the ordinary tuition fees.

Students taking Blowpipe Analysis, when it does not form part of their course, are required to pay a fee of $5.

Partial Students may attend the course of Instruction in Meteorology on paying a fee of $5.

*The first term ends with the Christmas examinations, the second with the Sessional.

§ IX. COURSES OF LECTURES.

I. CIVIL ENGINEERING AND APPLIED MECHANICS.

Professor :—HENRY T. BOVEY, M.A., C.E.

Civil Engineering.

The course of instruction in Civil Engineering will include the following :—Mechanism, Earthwork, Masonry, Carpentry, Structures of Timber, Stone and Iron, the Construction of Common Roads, Rail Roads, Bridges, Viaducts, Tunnels, Canals, River, Harbour and Sea Works, Drainage Works, Lighthouses, Works connected with Irrigation and Water Supply, &c.

The subject for Session 1883-84 will be Railway-Work.

N.B.—*Students of the Second Year are not required to pass the examination in this subject.*

Applied Mechanics.

The subject of Applied Mechanics will be treated under two heads :—

(*a*). The Strength of Materials, embracing a study of Work, Inertia, Energy and Entropy, the Strength, Stiffness, and Resilience of Materials, Beams or Girders, Pillars, Shafts, Structures (*simple and complex*), Earthwork, Retaining Walls and Arches.

(*b*). Hydraulics, comprising the Theory of Hydrostatics and Hydrodynamics, the Flow of Liquids through Orifices, Pipes and Canals, the Action of a Stream on inclined or curved Vanes (*fixed or revolving*) Hydraulic Machines (*Pressure Engine, Vertical Water Wheels, Turbines, Centrifugal Pumps*), Pneumatics.

Thermo-Dynamics and the Steam-Engine.

The course of instruction in this Department will embrace :—The General Description of the Steam Engine, the Theory of Heat, the Application of Heat to Thermal Machines, the Production of Heat and Steam, and also :—

(*a*). The movement and distribution of Steam, including the action of Steam in a Cylinder, the methods and regulation of the distribution of Steam, Systems of Cut-off, the general disposition of Cylinders, Condensers, &c.

(*b*). The modes of transmission and a consideration of certain special machines.

(*c*). The construction of an Engine, under which head will be considered Rivets, Bolts, Screws, Sockets, Keys, Cylinders, Pistons, Organs of Distribution, Organs of Transmission.

(*d*). The construction of Special Machines.

Designs, Estimates, &c.

Engineering Students will also prepare designs, specifications, and estimates of such works as are usually undertaken by the Engineer.

Each Student works independently, under the personal supervision of the Professor of Engineering, and makes such drawings and calculations as would be needed wer the structure designed to be actually carried out.

* II. MECHANICAL ENGINEERING.

Professors BOVEY AND MCLEOD.

Mechanism.

The lectures on Mechanism will treat of :—The object and structure of a machine and the parts of a machine, bearings, connections (*simple and complex*), elementary combinations and their classification, shewing the various modifications of motion (*with constant or variable velocity ratios*), engagements (*teeth of wheels, &c.*), adjustments.

Theory of Machines.

This Branch will comprise :—

(*a*). *The Transmission of Work*, including the measurement of work, the efficiency of machines, dynamical friction, viscosity, and the methods of transmitting work (*by continuous rotation, oscillation, belts, water, and compressed air.*)

(*b*). *The Modification of Work and Stores of Energy*, embracing a study of the actual energy of moving pieces, springs and weights.

(*c*). *Governing and Controlling Machines*, including a consideration of uniform effort, variable resistance, machines driven by fluid pressure, differential governors.

(*d*). *Balancing Machinery.*

Mechanical Work.

A course of lectures will be given on the following specific Departments of Mechanical Engineering, and will treat entirely of the principles and results of actual practice ;—The different classes of machinery, Belts, Gearing, Forging, Hammers (*Trip, Crank, Steam and Compound*), the Tempering of Steel, Tools, Vice-work, Fitting and Finishing, Lathes and Lathe-work, Planing, Slotting and Shaping Machines, Boring and Drilling, Milling and Milling tools, Screw-cutting, the Slide-valve, Standard Measures, Gauging Implements, and calculations respecting the speed of Wheels, Pullies, &c.

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* Unless sufficient funds are forthcoming to warrant the continuance of this Course no Mechanical Engineering Students will be received into the First Year after Session 1883-84.

III. MINING ENGINEERING.

Professor :—B. J. HARRINGTON, B.A., PH.D.

The object of this course is to give Students a knowledge of the characters and mode of occurrence of various economic minerals, together with the methods employed for their extraction and subsequent treatment.

The lectures on Mining are given during the Third Year, and among the subjects taken up the following may be mentioned :—Blasting and the nature and use of different Explosives, Quarrying, Hydraulic Mining, Boring, the Sinking, Timbering and Tubbing of Shafts, Driving and Timbering of Levels, Underground Conveyance and Hoisting, Drainage and Pumping, Lighting and Ventilation of Mines, special methods of Exploitation employed in the working of Metalliferous Deposits or of Coal Seams, &c. During this year, also, instruction is given in Blowpipe Analysis, the object of which is to enable Students by means of the blowpipe and a few simple re-agents to detect the nature of different Minerals or Ores. On account of the small quantity of apparatus required, and the rapidity with which accurate results may be arrived at, a knowledge of this subject will be found most useful to those engaged in geological or other field-work.

In the Fourth Year a short course of lectures on Metallurgy is given, and assays are made of various Ores, Fuels, &c.

NOTE.—The lectures on Mining and Metallurgy are illustrated by a series of Models.

IV. DESCRIPTIVE GEOMETRY AND SURVEYING.

Professor :—C. H. MCLEOD, MA.E.

Descriptive Geometry.

SECOND YEAR.—(1).—Linear Drawing. (2).—Orthographic projection, including penetrations, developments, sections, etc.

THIRD YEAR.—(1).—Orthographic projection (continued). Tangent planes and normals. Curved surfaces. Graphical determination of spherical triangles. (2).—Spherical projections, including the construction of maps. (3).—Axometric projection. Isometric projection. (4)—Shades and shadows. (5).—Mathematical perspective. Perspective of shades and shadows.

Surveying.

This course is designed to qualify the student for admission to the practice of Provincial and Dominion Land Surveying. It also affords a practical and heoretical training in field engineering.

SECOND YEAR.—Chain Surveying, Compass Surveying. The use and adjustment of the Transit, Theodolite, Level (Dumpy, Y, and other forms), Sextant, Aneroid Barometer, Plane-table and other field instruments. Contour Surveying, Underground Surveying. Plotting, Practical operations in the field. Calculating areas.

THIRD YEAR.—Topography. Methods of Setting out Work. Curves. Indirect and Barometric Levelling. Hydrographic Surveying. Spherical Surveying. Practical operations in the field.

NOTE.—The field work is carried out under the personal supervision of the Professor, and is as follows:—(*a*) a chain survey, (*b*) an angular survey, (*c*) a contour survey, (*d*) the location of a line of road, including preliminary surveys, ranging curves, levelling and setting out the work, (*e*) a hydrographic survey. Each student is required to make field notes, and from these to plot all plans and sections required in connection with the above.

V. CHEMISTRY.

Professor:—B. J. HARRINGTON, B.A., PH.D. (Greenshields Professor of Chemistry and Mineralogy.)

A course of lectures, illustrated by experiments, is given to all students of the First Year, on the preparation and properties of the non-metallic and metallic Elements and many of their Compounds, and on the elementary principles of Organic Chemistry. Students taking these lectures must also devote at least one afternoon a week to practical work in the laboratory.

In the Second and Third Years instruction will be given to students of the Mining and Chemistry Courses Qualitative and Quantitative Analysis. Students in the Third Year of the Chemistry Course will also attend one lecture a week on Theoretical Chemistry.

NOTE.—The Laboratory is supplied with Chemical Balances (by Becker & Sons), Spectroscopes, Gas Combustion Furnace, &c.

VI. PRACTICAL CHEMISTRY.

Professor:—GILBERT P. GIRDWOOD, M.D.

This course will be conducted in the Laboratory of the Medical Faculty, and will be specially designed for Chemistry Students of the Third and Fourth years. It will include instruction in the method of Qualitative and Quantitative Analysis, of Inorganic and Organic Bodies, Fractional Distillation, determination of Boiling Points, Melting Points, &c.

VII. GEOLOGY.

Professor:—J. W. DAWSON, LL.D., F.R.S. (Logan Professor of Geology.)

Assistant Professor;—B. J. HARRINGTON, B.A., PH.D., F.G.S.

SECOND YEAR.—A preliminary Course in Zoology, with special reference to Fossil Animals.

THIRD YEAR.—Mineralogy, Lithology, Physical and Chronological Geology and Palæontology, Geology of Canada, Methods of Geological Exploration.

FOURTH YEAR.—Special Studies in Mineralogy and Lithology, Advanced Course in General Geology and Palæontology, Geology of Canada, Practical Geology and Field-work.

VIII. MATHEMATICS AND MATHEMATICAL PHYSICS.

Lecturer :—G. H. CHANDLER, M.A.

The lectures in this course are specially designed to meet the requirements of Students of Applied Science ; these in Mechanics being introductory to Applied Mechanics. The subjects are as follows :—

FIRST YEAR.—(1) Euclid, six books. (2) Loci, Transversals, &c. (3) Algebra, to Progressions. (4) Plane Trigonometry and the use of Mathematical Tables. (5) Elements of Solid Geometry. (6) Geometrical Conic Sections.

SECOND YEAR.—(1) Algebra continued. (2) Analytical Geometry. (3 Differential and Integral Calculus. (4) Mechanics.

THIRD YEAR.—(1) Mechanics continued. (2) Spherical Trigonometry. (3) Spherical and Practical Astronomy. (4) Revision and continuation of Analytical Geometry and Calculus with applications to Mechanics, &c.

IX. EXPERIMENTAL PHYSICS.

Professor :—ALEXANDER JOHNSON, LL.D. (Peter Redpath Professor of Natural Philosophy.)

Students in this Faculty are required to take the course in Experimental Physics provided by the Faculty of Arts.

The subjects for the Session 1884-85 are Electricity, Magnetism and Sound.

X. ENGLISH LANGUAGE AND LITERATURE.

Professor :—CHARLES E. MOYSE, B.A. (Molson Professor of English Language and Literature.)

FIRST YEAR.—English Language and Literature.

SECOND YEAR.—A special course on English Composition.

THIRD YEAR.—A special course on English Composition.

TEXT-BOOK.—Smith's English Composition.

XI. FRENCH OR GERMAN.

French :—Professor P. J. DAREY, M.A., B.C.L.

German :—Professor C. F. A. MARKGRAF, M.A.

Students of this Faculty are required to take the course in one of these languages provided by the Faculty of Arts.

XII. METEOROLOGY.

Instruction in Meteorological Observations will be given in the Observatory at hours to suit the convenience of Senior Students.

Certificates will be granted to those Students who pass a satisfactory examination on the construction and use of Meteorological Instruments, and on the general facts of Meteorology.

N.B.—Students of the Second, Third and Fourth Years will be required to answer satisfactorily a weekly paper on such subjects of the course as shall be determined by the Faculty.

§ X. TEXT-BOOKS.

Civil Engineering and Applied Mechanics:—Bovey, Rankine, *Collignon, *Weisbach, *Van Buren, Reuleaux.

Machinery, etc. :—Goodeve (new edition), *Willis, Rankine, Knight, Rose, Shelley, *Fairbairn, Unwin.

Thermodynamics:—Maxwell, *Clausius (tr. by Browne), Rontgen (tr. by DuBois).

Steam Engine :—Rankine, Rigg, Marks.

Steam Boiler:—Wilson.

Moulding and Founding:—Overman.

Materials:—Notes on Building Construction *Gilmore, Thurston.

Descriptive Geometry :—Millar's Descriptive Geometry.

Surveying :—Gillespie's Land Surveying.

Geology:—Dana's Geology, Dawson's Handbook of Zoology and Lecture Notes on Geology, Nicholson's Palæontology, Geological Survey Reports, Dawson's Acadian Geology.

Mineralogy :—Dana's Manual, * Dana's Descriptive Mineralogy.

Blowpipe Analysis:—Brush's Determinative Mineralogy and Blowpipe.

Chemistry:—Nichol's Abridgment of Eliot and Storer's Manual of Chemistry. Jones' Junior Course of Practictal Chemistry.
Fresenius' Manuals of Qualitative and Quantitative Analysis.

Assaying:—Rickett's Notes on Assaying. Chapman's Assay Notes.

Mathematics :—Todhunter's Euclid, Colenso's Algebra (Part 1), Hamblin Smith's Trigonometry, Wilson's Solid Geometry and Conic Sections, Brigg's Analytical Geometry, Peck's Calculus, Goodeve's Principles of Mechanics, Chambers' Practical Mathematics, Chambers' Mathematical Tables.

TABLE OF LECTURES.

Years	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
FIRST YEAR.	9			English.	Mathematics.	Mathematics.
	10	Mathematics.	Mathematics.			
	11	English.	French.	French.	French.	English.
	12	Chemistry.	German.	Mathematics.	German.	Chemistry.
						Prac. Chem.
	3					Do
						Do

* *Books of Reference.*

TABLE OF LECTURES—(*Continued.*)

Years	Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
SECOND YEAR.	9	French.	Materials.	French. German.	Hydraulics.	{ French. { German.
	10	Surveying.	Botany.†	Surveying.	{ Botany.† { Mathematics	German.
	11	Mathematics.	Zoology.	Math. Physics	Zoology.	Math. Physics.
	12	German.	Exp. Physics.	German.	Exp. Physics.	English.
	2	{ Mechl. Work { Prac. Chem.	Mechanism.		{ Drawing. { Prac. Chem. { Mech. Work.	Mechanism.
	3	Drawing.	Drawing.		Do	Drawing.
	4	Do			Do	Do
THIRD YEAR.	9	App. Mech.	Materials.	{ Geology. { Machinery.	Hydraulics.	German.*
	10	Geology.	French. German.	Mathematics.	French & Ger. Theor. Chem.	Geology. Machinery.
	11	App. Mech. (Advanced).	English.	German.	App. Mech.	
	12	Mat. Physics.	Exp. Physics.	German.	Exp. Physics.	Math. Physics.
	2	{ Mech. Work { Prac. Chem. { Drawing.	App. Mech.	{ Blowpipe. { Analysis.	{ Prac. Chem. { Drawing. Mech. Work.	App. Mech.
	3	Surveying.	Drawing.		Drawing. Surveying.	Drawing.
	4	Drawing.	{ Drawing. { Mining.		Do	Do
FOURTH YEAR.	9	Geology.* M. & M.	Materials.	Designing.	Hydraulics.	Geology.*
	10	Construction.	Designing.	Do	App. Mech. Construction.	Designing*
	11	App. Mech. (Advanced).	Do	Geology.*	App. Mech. (Advanced.)	Do
	12	App. Mech. (Advanced).	Do		App. Mech.	Do
	2	{ Assaying. { Designing.	App. Mech.		{ Assaying. { Designing.	App. Mech.
	3	Do	Hydraulics (*a.*) Steam (*a.*)		Do	Hydraulics (*a*) Steam (*a.*)
	4	Do	Do	Metallurgy.*	Do	Do

* For Mining Students. (*a*) Steam during first term; Hydraulics during second term.

Field work for Students of the 2nd year on Mondays, Tuesdays, Wednesdays and Thursdays; for Students of the Third Year on Mondays, Wednesdays and Thursdays, during the months of September and October.

† For Practical Chemistry Students.

Faculty of Medicine.

THE PRINCIPAL (ex-officio).

Professors :—	Professors :—
WRIGHT,	RODDICK,
HOWARD,	OSLER,
MCCALLUM,	GARDNER,
CRAIK,	SHEPHERD,
FENWICK,	BULLER,
DRAKE,	BROWNE,
GIRDWOOD,	STEWART,
ROSS,	WILKINS,

Dean.—R. P. HOWARD, M.D.

Registrar.—W. OSLER, M.D.

Demonstrator of Anatomy.—R. L. MACDONNELL, B.A., M.D.

The fifty-second session of the Faculty will be opened on Wednesday, October 1st, 1884, by an introductory lecture at 8 p.m. The regular lectures will begin on October 2nd, at the hours specified in the time table, and will be continued for six months.

The Medical School of McGill University was founded in 1824 as the Medical Institution by John Stephenson, Andrew F. Holmes, William Robertson and William Caldwell. In 1829 the Medical Institution beame the Medical Faculty of McGill College. There were no sessions during the political troubles from 1836 to 1839, and it is owing to this gap that the present is the 52nd session of the Faculty. In reality this is the 56th session of the school, which is the direct continuation of the Medical Institution.

The Medical College, a large and substantial building situated within the University Grounds, contains two spacious class-rooms, Students' waiting-room, Library, Museum, Laboratories, together with a large and wel-furnished Dissecting-room.

The class tickets for the various courses are accepted as qualifying candidates for examination before the various Colleges and Licensing Bodies of Great Britain and Ireland, and the College of Physicians. and Surgeons of Ontario. The degree in Medicine of this University carries with it at the Licensing Boards of Great Britain the same exemptions in certain subjects as are granted to all colonial degrees

To meet the circumstances of the General Practitioners in British North America, where there is no division of the profession into Physicians and Surgeons exclusively, the degree awarded upon graduation is that of "Doctor of Medicine and Master of Surgery," in accordance with the general nature and character of the curriculum, as fully specified hereafter. The degree is received by the College of Physicians and Surgeons of the Province of Quebec.

It affords the Faculty great satisfaction to be able to announce that their efforts to secure an endowment have been successful. As the lists on a previous page show, over $50,000 have been subscribed to the Campbell Memorial Fund ; and the Hon. Donald A. Smith on August 1st, 1883, redeemed his promise by handing over to the Governors for the use of the Faculty $50,000, to be known as the "Leanchoil Endowment."

The Faculty take this opportunity of publicly expressing their sincere thanks to the Hon. D. A. Smith and to the many friends who subscribed to the Campbell Memorial Fund. It is extremely gratifying to them to feel that the memory of their late Dean should have received these lasting tributes from his fellow-citizens,and that his name should be thus permanently associated with the school he loved, and, by the gift of Mr. Geo. Stephen, with the Hospital he so long served.

I.

MATRICULATION.

It is very important that intending Students should bear in mind the following: (1) *That if natives of Ontario, and if they wish to obtain the license of that Province, theymust conform to the regulations regarding the Preliminary Examination, and register before begining their Medical Studies.* (2) *If natives of the Province of Quebec, they must pass the Matriculation Examination of the Quebec Medical Board.*

(3) *Natives of the Maritime Provinces and of Manitoba, may present themselves before the Local Medical Boards for the Preliminary Examination. Where the Examination and Standard are equivalent to those of the University, a certificate (bearing the standing of the candidate in the various subjects) will be accepted, and the student may register without further examination or fee.*

Graduates in Arts are exempt from the Matriculation.

13

University Matriculation Examination.

This examination is the same as that recommended by the Medical Council of Great Britain. Examinations in conformity therewith will be held the last Friday and Saturday in March and the last Friday and Saturday in September of each year. Applications may be made to the Registrar of the Faculty till the evening of the previous day. The requirements of the standard for Matriculation are :—(1) English Language, including Grammar and Composition.* (2) English History. (3) Modern Geography. (4) Latin, including Translation from the original and Grammar. (5) Elements of Mathematics, comprising (*a*) Arithmetic, including Vulgar and Decimal Fractions; (*b*) Algebra, including simple Equations: (*c*) Geometry, including the first two books of Euclid or the subjects thereof. (6) Elementary Mechanics of Solids and Fluids, comprising the elements of Statics, Dynamics and Hydrostatics. (7) One of the following optional subjects ;—(*a*) Greek, (*b*) French, (*c*) German, (*d*) Italian, (*e*) any other modern language, (*f*) Logic, (*g*) Botany (*h*) Elementary Chemistry.

TEXT-BOOKS.—Latin,—Cicero, Orations 1 and 2 against Cataline; or Virgil, Æneid, Bk. I.

GREEK.—Xenophon, Anabasis, Bk. I., or equivalent.

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* The ability of the candidate will be fully tested in the following :—"(1) To write sentences in English on a given theme, attention being paid to spelling and punctuation as well as to composition ; (2) to write correctly from dictation ; (3) to explain the grammatical construction of sentences ; (4) to point out the grammatical errors in sentences ungrammatically composed, and to explain their nature ; and (5) to give the derivation and definition of English words in common use."

FRENCH.—Charles XII., Two Books.

NATURAL PHILOSOPHY.—Ganot's Physics.

BOTANY.

ELEMENTARY CHEMISTRY.

(b) Matriculation Examination of College of Physicians and Surgeons of the Province of Quebec.

The subjects of examination are as follows :—

Compulsory Subjects :—English, French, Latin, Arithmetic, Algebra, Euclid, History, Geography, Belles-Lettres.

Optional Subjects :—Candidates can select any one of the fol lowing :—Greek, Natural and Moral Philosophy.

The Examinations will be held upon the 18th of September, 1884, at Quebec, and on the 7th of May, 1885, at Montreal. Applications to be made to Dr. F. W. Campbell, Montreal, or Dr. Belleau, Quebec, either of whom will furnish schedule giving text books and percentage of marks to be obtained.

Examination Fee, ten dollars. Should the candidate be unsuccessful, one half of the fee will be returned.

Of the four years study *after* having passed the Matriculation Examination, three six months' sessions, at least, must be attended at a University, College, or Incorporated School of Medicine, recognized by the "Provincial Medical Board." The first session must be attended during the year immediately succeeding the Matriculation Examination, and the final session must be in the 4th year.

(c) Matriculation Examination of the College of Physicians and Surgeons of the Province of Ontario.

The official certificate of having passed the High School Intermediate Examination with Latin included and payment of fees of twenty dollars.

Graduates in Arts, or Students having Matriculated in Arts in any University in Her Majesty's Dominions are not required to pass this Examination, but may register their names with the Registrar of the College, upon giving satisfactory evidence of their qualifications, and upon paying the fee of Twenty Dollars.

II.

ENREGISTRATION AND PAYMENT OF FEES.

The following are the University Regulations :

All Students desirous of attending the Medical Lectures shall, at the commencement of each Session, enrol their names and residences in the Register of the Medical Faculty, and procure from the Registrar a ticket of Enregistration, for which each Student shall pay a fee of $5 ; excepting in the Clinical Classes, in which Enregistration for Students of other Schools shall not be compulsory.

The said Register shall be closed on the last day of October in each year. The fees are payable to, and all class tickets will be issued by, the Registrar, and must be paid in advance (except under special circumstances) at the time of enregistration.

Enregistration in the Summer Session is compulsory upon all Students, whether attending one or more of the Classes.

III.

COURSES OF LECTURES.

1 Anatomy.—(Prof. Shepherd.)—Anatomy will be taught in the most practical manner possible, and its relation to Medicine and Surgery will be fully dwelt on. The lectures will be illustrated by the fresh subject, moist and dry preparations, sections, models and plates and drawings on the black-board.

2. Practical Anatomy.—[Drs. MacDonnell, Sutherland and R. J. B. Howard.]—Special attention is devoted to this important branch, the teaching being similar to that of the best European schools. The Dissecting-Room is open from 8 a.m. to 10 p.m. ; the Demonstrators' hours are from 10 to 12 a.m., and 8 to 10 p.m. Special Demonstrations on the Brain, Thorax, Abdomen, Bones, etc., are frequently given. Every Student must be examined *at least* three times on each part dissected, and if the examinations are satisfactory a certificate is given. Prizes are awarded at the end of the Session for the best examination on the fresh subject. Abundance of material provided.

3. Chemistry.—[Prof. Girdwood.]—InorganicChemistry is fully treated ; a large portion of the course is devoted to Organic Chemistry and its relations to Physiology. The branches of Physics bearing upon or connected with Chemistry also engage the attention of the Class. For experimental illustration, abundant apparatus is possessed by the Professor, among which may be enumerated, a powerful Air-Pump—Oxy-Hydrogen Microscope—Polariscope—extensive series of Models of Crystals, Electrical and Galvanic apparatus, Steam Engine, &c., &c.

4 Practical Chemistry.—[Prof. Girdwood.]—Thorough instruction is given in the different departments of Practical Chemistry in the Laboratory of the Faculty, under the personal supervision of the Professor. The course includes blow-pipe manipulations, qualitative and quantitative analysis, toxicological investigations, &c., &c. This class may be taken in the Summer Session.

5 Institutes of Medicine.—[Prof. Osler and Dr. Mills.]—Embraced in this course are the following classes :—

(*a*) **Physiology**, comprising :

(1) A full course of didactic lectures upon the structure and functions of the various organs of the body in health. The lectures are illustrated by fresh preparations, diagrams, plates and models, and by experiments with apparatus.

(2) Practical Physiology :—In addition to the demonstrations in the Lecture room, the senior members of the class have an opportunity of attending the following : (*a*) Physiological chemistry (weekly until Christmas), in which class each student works over the essentials of the chemistry of digestion, the secretions and the urine. (*b*) A special demonstration course in Experimental Physiology (weekly, after Christmas) with the use of apparatus.

(3) Histology.—1st. Normal. A bi-weekly course of lessons throughout the session. Microscopes, re-agents and material provided. It comprises thorough instruction in the use of the Microscope and the preparation of the tissues, each Student preparing for himself during the course a cabinet of 100 or more specimens. 2nd. Pathological, including the Microscope in relation to Practical medicine. Bi-weekly in the Summer Session.

(*b*) **Pathology**, comprising.

(1) Twenty lectures on General Pathology to the students of the 3rd year.

(2) Pathological Demonstrations—weekly—Saturday, 10 a.m. This course is based upon, and conducted, as far as possible, in the same way as that of Prof. Virchow, at the Berlin Pathological Institute. Specimens of all kinds are collected throughout the week, kept until Saturday, and then brought before the class, when practical comments are made upon them.

(3) Instruction in Post-Mortems—The Autopsy Room of the General Hospital is in charge of the Professor, and the post-mortems are performed by the Students in rotation, under his supervision. System and thoroughness in inspection are insisted upon, the method followed being that of Virchow. As far as possible, attention is drawn to the Medical Anatomy of the thoracic and abdominal organs. In connection with this class, aided by the Professor of Medical Jurisprudence, two Coroners' Inquests will be conducted during the Session before the class, and the Medico-legal aspects of post-mortems dwelt upon.

Materia Medica and Therapeutics.—[Prof. Stewart.]—The course on this subject deals for the most part with the pharmacology and therapeutics of the

different medicinal agents. A good deal of attention will be given to the "untoward effects" of drugs, and when possible these effects will be illustrated by the exhibition of living specimens.

The leading officinal agents of the British Pharmacopœia will be fully considered, as will also those drugs of recent introduction into practice which have been found useful, but have not, as yet, found their way into the Pharmacopœia. The following groups of medicinal agents will, on account of their great importance, receive special attention:—(1) Cardiac Tonics, (2) Cardiac Depressants, (3) Motor Stimulants, (4) Motor Depressants, (5) Anæsthetics, (6) Analgesics, (7) Mydriatics, (8) Alteratives, (9) Hæmatinics, (10) Astringents, (11) Purgatives, (12) Digestants, (13) Nutritives, (14) Antiseptics, (15) Antipyretics.

7 Theory and Practice of Medicine.—[Prof. Howard.]—While the lectures on this subject are mainly devoted to Special Pathology and Therapeutics, the department of General Pathology in this University being included in the Institutes of Medicine, no opportunity is lost of illustrating and explaining the *general* laws of disease. With the exception of certain affections seldom or never observed in this country, all the important diseases of the body, not described from the chairs of Surgery and Obstetrics, are discussed, and their Pathological Anatomy illustrated by the large collection of morbid preparations in the University Museum, and by fresh specimens contributed by the Demonstrator of Morbid Anatomy.

The College possesses an extensive series of Anatomical plates illustrative of the histological and anatomical appearances of disease, and the wards of the General Hospital afford the lecturer ample opportunities to refer to living examples of very many of the maladies he describes, and to give the results of treatment.

8 Clinical Medicine.—[Prof. Ross.]—Attendance is given in the Medical Wards of the Montreal General Hospital on three days of every week with the 3rd year students and three days with the 4th year men. Accurate reports of all cases are kept by duly appointed clinical clerks, and are systematically read before the class. Instruction is given by the bedside, and special inducements are offered to every pupil to take part in the physical examination of patients. The mode of conducting investigations, the use of the microscope, the value of the thermometer and ophthalmoscope, etc., in Medical Diagnosis, are all explained and illustrated. Senior Students are called upon in rotation to examine new cases before the class, and to be examined thereon as to their general knowledge. In addition, one weekly Clinical Lecture is delivered, bearing upon some case or cases of importance which may happen to be under observation at the time. Special attention is directed to Medical Anatomy, and candidates for the degree will be examined thereon.

9 Surgery.—[Prof. Fenwick.]—The lectures on this subject are divided into, 1st. Surgical Pathology, illustrated by a large collection of preparations from the College Museum, also specimens as they are obtained from cases under observation at the Hospital, and contributed to that collection by the Hospital pathologist and rom private sources. The second part of the course is devoted to the practice of

Surgery, in which attention is drawn to cases which have been observed by the class during the previous summer session. The various surgical apparatus are exhibited, and their uses and application explained. Surgical Anatomy and Operative Surgery forms a special department of this course, and Quain's and Maclise's plates are used in illustration.

10 Clinical Surgery.—[Prof. Roddick.]—This course is eminently practical, consisting of bedside instruction and lectures delivered weekly, illustrative of Surgical cases actually present in the wards of the General Hospital. The class is separated into junior and senior divisions which are taken charge of by the Teacher on alternate days, when the reports of the Clinical clerks are read and criticized, and fresh cases are examined by the senior Students. The Surgical dressings are, as much as possible, reserved for these occasions, so as to give all present an opportunity of participating in the application of splints to fractures, dressing of wounds, minor operations, etc. Major operations are performed in the theatre attached to the Hospital, which is so constructed that the most distant can obtain a fair view of the operation. All of the recently invented appliances for the treatment of Surgical disease have been introduced into the Hospital.

11 Midwifery.—[Prof. Browne].—This course will embrace (1) Lectures on the principles and practice of the obstetric art, illustrated by diagrams, fresh and preserved specimens, the artificial pelvis, &c. (2) Bedside instruction in the Lying-in-Hospital, including the management and after-treatment of cases ; (3) A complete course on obstetric operations with the phantom and preserved fœtuses, in which each final student will perform the various manipulations and operations (4) The Diseases of Infancy.

12 Gynæcology.—[Prof. Gardner.]—The course on this subject will comprise two lectures a week throughout the session. The anatomy and physiology of the parts concerned will be first discussed. Then the various methods of examination will be fully described, the necessary instruments exhibited and their uses explained. After this the diseases peculiar to the sex will be considered as fully as time will permit in the following order :—Disorders of Menstruation ; Leucorrhœa, its causes and treatment ; Pelvic Cellulitis and Peritonitis ; Lacerations of the Cervix Uteri and Perineum ; Urinary and Fæcal Fistulæ ; Inflammations of the Uterus ; Displacements of the Uterus ; Tumours of the Uterus ; Diseases of the Ovaries.

The lectures will be illustrated as fully as possible by drawings and morbid specimens. The gynæcological clinic of the University Dispensary furnishes the Professor with ample material to illustrate the subjects considered in the didactic lectures.

13 Medical Jurisprudence.—[Prof. Wilkins.]—This course includes *Insanity*, the subject being treated of in its Medical as well as Medico-legal aspects. Special attention is devoted to the subject of blood stains, the Clinical, Microscopic and Spectroscopical tests for which are fully described and shown to the class. The various spectra of blood in its different conditions are shown by Zeiss' Micro-

spectroscope, so well adapted for showing the reactions with exceedingly minute quantities of suspected material. Recent researches in the diagnosis of human from animal blood are alluded to. In addition to the other subjects usually included in a course of this kind, Toxicology is taken up. The modes of action of poisons, general evidence of poisoning and classification of poisons are first treated of, after which the more common poisons are described with reference to symptoms, post-mortem appearances, and chemical tests. The post-mortem appearances are illustrated by plates, and the tests are shown to the Class.

14 Hygiene and Public Health.—[Dr. MacDonnell.]—A three months' course of Lectures will be delivered on this subject, the attendance upon which is now compulsory. The course comprises lectures on Drinking water and Public water supplies ; conditions of Soil and Water as affecting health, including Drainage and the various methods for the removal of Excreta ; the Atmosphere, including Heating and Ventilation ; Individual Hygiene, comprising the subjects of Food and Drink ; Physical Exercise and Bathing ; discussion of the respective merits of the various forms of each, precautions, contra-indications, etc. Village Sanitary Associations ; Mutual Protective Sanitary Associations for cities.

15 Ophthalmology and Otology.—[Dr. Buller.]—Will include a course of lectures on diseases of the Eye and the Ear, both Didactic and Clinical. In the former the general principles of diagnosis and treatment will be dealt with ; in the latter, cases illustrative of the typical forms of ordinary diseases of these organs will be exhibited and explained to the class, and afterwards placed under the special care of gentlemen who may show themselves competent to take charge of them. A Course of Operations on the Cadaver will be open to such Students as may wish to avail themselves of the same.

16 Botany and Zoology.—[Prof. Penhallow.]—The course in Botany is illustrated by specimens, diagrams, models, and the microscope. Students have access without any additional fee to the lectures in Zoology in the Faculty of Arts, and to the Natural History Museum of the University and the Museum of the Natural History Society of Montreal.

Students have an opportunity of attending a course of eight lectures on the Parasitic Diseases of Man and the Domestic Animals. (Prof. Osler.) The life, history and development of the Entozoa, together with the diseases caused by them, are fully considered. The lectures are illustrated by a series of beautiful diagrams, and by fresh and prepared specimens.

The following are extracts from the University Regulations with respect to the courses of Lectures :

1st. Each Professor shall deliver at least five Lectures during the week, except in Medical Jurisprudence and Botany, if extended through six months, in which case three Lectures a week will suffice.

2nd. Every Lecture shall be of one hour's duration.

3rd. Every Professor shall occasionally examine his class upon the subjects treated of in his preceding Lectures, and every such examination shall be considered a Lecture.

4th. A roll of the names of the Students attending each class shall be called from time to time.

IV.

QUALIFICATIONS FOR THE DEGREE.

The following are extracts from the Regulations respecting the qualifications of Candidates for the Degree in Medicine :

No one entering after October first, 1884 will be admitted to the Degree of Doctor of Medicine and Master of Surgery, who shall not have attended Lectures for a period of at least four six months' sessions and one three months' summer session* in this University, or some other University, College, or School of Medicine, approved of by this University.

2nd. Candidates for the Final Examination shall furnish Testimonials of attendance on the following branches of Medical Education, viz. :—

Anatomy. *Chemistry.* *Materia Medica and Pharmacy.* *Institutes of Medicine.* *Principles and Practice of Surgery.* *Midwifery and Diseases of Women and Children.* *Theory and Practice of Medicine.* *Practical Anatomy.* *Clinical Medicine.* *Clinical Surgery.*	*Of which two Courses will be required of six months' duration.*
Medical Jurisprudence.	*Of which one Course of six month, or two Courses of three months will be required.*
Practical Chemistry. *Botany or Zoology.* *Hygiene.*	*Of which one Course will be required of three months' duration.*

And a Course of not less than twenty-five Demonstrations upon Microscopic Anatomy, Physiology, and Pathology.

Provided, however, that Testimonials equivalent to, though not precisely the same, as those above stated may be presented and accepted.

3rd. The Candidate must give proof by ticket of having attended during eighteen months the practice of the Montreal General Hospital, or that of some other Hospital approved of by this University, and have compounded medicines for six months.

* To be taken after 3rd winter session.

4. He must also give proof by ticket of having attended for at least six months the practice of the University or other Lying-in-Hospital approved of by this University, and of having attended at least six cases of accouchement.

5. No one will be permitted to become a Candidate for examination who shall not have attended at least one Session of this University, and one full course of all the branches included in its curriculum.

6th. Courses of less length than the above will only be received for the time over which they have extended.

7th. Every Candidate for the Degree must, on or before the fifteenth of February, present to the Dean of the Medical Faculty testimonials of his qualifications, entitling him to an examination, and must at the same time deliver to the Dean of the Faculty the following Certificate :—

MONTREAL,———18—

I, the undersigned, being desirous of obtaining the Degree of Doctor of Medicine and Master of Surgery, do hereby declare that I have attained the age of twenty-one years, or (if the case be otherwise), that I shall have attained the age of twenty-one years before the next graduation day, and that I am not (or shall not be at that time, under articles as a pupil or apprentice to any Physician, Surgeon, or Apothecary. (Signed), A.B.

8th. The trials to be undergone by the Candidate shall be such as are referred to under Section V.

9th. The following Oath or affirmation will be exacted from the Candidate before receiving his degree :

SPONSIO ACADEMICA.

In Facultate Medicinæ Universitatis.

Ego, A——B——, Doctoratus in Arte Medica, titulo jam donandus, sancto coram Deo cordium scrutatore, spondeo ;—me in omnibus grati anim officiis erga hanc Universitatem, ad extremum vitæ halitum, perseveraturum ; tum porro artem medicam caute, caste, et probe exercitaturum ; et quoad in me est, omnia ad ægrotorum corporum salutem conducentia, cum fide procuraturum ; quæ denique, inter medendum, visa vel audita silere conveniat, non sine gravi causa vulgaturum. Ita præsens mihi spondenti adsit Numen.

10th. The Fee for the Degree of Doctor of Medicine and Master of Surgery shall be thirty dollars, to be paid by the successful candidate immediately after examination, together with a Registration fee of one dollar.

V.

EXAMINATIONS.

In each class a weekly examination is held to test the progress of the Student; and in addition two or three written examinations are given throughout the Session.

The examinations at the close of each Session are arranged as follows:

1st Year—

HISTOLOGY. BOTANY. CHEMICAL PHYSICS.—including.—Molecular Forces, Heat, Light, Electricity and Magnetism.

2nd Year—Primary, Pass Examination.

ANATOMY.
PRACTICAL ANATOMY.
PHYSIOLOGY.
CHEMISTRY.
PRACTICAL CHEMISTRY.

3rd Year—

MATERIA MEDICA.
MEDICAL JURISPRUDENCE WITH TOXICOLOGY.
HYGIENE.*
GENERAL PATHOLOGY.

4th Year—
MEDICINE.
SURGERY.
MIDWIFERY.
CLINICAL MEDICINE.
CLINICAL SURGERY.

By means of the above arrangement a certain definite amount of work must be accomplished in each year, and an equitable division is made between the Primary and Final branches.

With regard to the Primary Examination at the end of the 2nd Year, it remains optional with the Student whether he passes in all the branches or leaves two for the 3rd Year. In any case, Chemistry and one other must be taken at the close of the 2nd Year.

VI.

MEDALS AND PRIZES.

1st. The Holmes Gold Medal, awarded to the Student of the graduating class who receives the highest aggregate number of marks for the best examinations, written and oral, in both Primary and Final Branches.

2nd. A prize in books awarded for the best examination, written and oral, in the Final Branches. The gold medalist is not permitted to compete for this prize.

3rd. A prize in books awarded for the best examination, written and oral, in the Primary Branches.

4th. The Sutherland Gold Medal, awarded for the best examination in Theoretical and Practical Chemistry, together with creditable examination in the Primary Branches.

A prize of $25 for best collection of Plants.

A prize in books for the best examination in Practical Anatomy.

Candidates must be Students in Botany of the previous Session, and the collections or duplicates of them must remain in the College Museum.

VII.

FEES.

Distributed according to years, the class fees are as follows:

FIRST YEAR.

Anatomy	$12 00
Institutes of Medicine, Physiology and Pathology, including Demonstrations	16 00
Chemistry	12 00
Practical Anatomy	12 00
Botany	5 00
Dissecting Material	5 00
Enregistration	5 00
Total	$67 00

* May be taken at the end of Second Year.

SECOND YEAR.

The same, without Botany, but with Hygiene, $6, Practical Chemistry and Materia Medica $12 each—Total	$92 00

THIRD YEAR.

Medicine	$12 00
Materia Medica	12 00
Clinical Medicine	12 00
Surgery	12 00
Clinical Surgery	12 00
Midwifery and Gynaecology	12 00
Med. Jurisprudence	10 00
Enregistration	5 00
Total	$87 00

FOURTH YEAR.

The same, with the omission of Jurisprudence, and Materia Medica-Total	$65 00

HOSPITAL FEES.

Montreal General Hospital, Perpetual Ticket	$20 00
University Dispensary	Free
University Lying-in Hospital	8 00
	$28 00
Graduation Fee	$30 00
Matriculation Fee, payable only if the Student takes the University Matriculation	$5 00
Total Collegiate and Hospital expenses, spread over four years, about	$370

First Year Students are advised to take out the Hospital ticket, and attend the out-door practice.

It is to be understood that a Student wishing to take any other class than those of his year can do so on payment of the class fee.

Fees are payable in advance, to the Registrar, at the time of enregistration.

VIII.

TEXT BOOKS.

Prices current in Montrial

ANATOMY.—Gray, $6; Wilson, $4; Quain, (Eng. Ed.) $9.75.

PRACTICAL ANATOMY.—Heath's Dissector, $4.50; Ellis' Dissector, $4.25; Holden's Dissector $5.00 and Landmarks $1.00.

CHEMISTRY.—Fownes, $2.25; Miller $1.00; Roscoe, $1.20.

PRACTICAL CHEMISTRY.—Odling, $1.75; Galloway, Fresenius $5.00

MATERIA MEDICA.—Therapeutics.—
Wood, $6.00. Scoresby Jackson, $3.75 and Whitla.

INSTITUTES OF MEDICINE.— *Physiology*.— Huxley's *Elementary Lessons* $1.35; with either Dalton (7th Edit. $5.00); Kirke, $4.25 or Foster (Am. Edit., $3.25). *Pathology*.—Virchow on Post-Mortems, $1.00; Green, $2,50.

HISTOLOGY.—Osler, 75c.

SURGERY.—Holmes' Surgery, (Eng. Ed.) $9.00; Erichsen, $8.50; Druitt, $4.00; Bryant, $6.50.

PRACTICE OF MEDICINE.—Flint, $5.00; Roberts, $5.00; Bristowe, $5.00; DaCosta, $6.00.

MEDICAL JURISPOUDENCE.—Taylor, $5.00; Guy and Ferrier, $3.75; Woodman & Tidy's Handbook, $7.50; Maudsley on Insanity, $1.50; Shepherd's Lectures on Madness, $2.05.

MIDWIFE Y.—Lusk, $5.00; Playfair, $4.00; or Leishman, $4.50.

GYNÆCOLOGY.—Edis, $3.00; Goodell's Lessons, $4.00; Hart and Barbour's Manual $7.50.

HYGIENE.—Parks, $5.50; Wilson, (Eng. Ed.) $3.25.

IX.

MUSEUM.

Most of the usual Pathological Specimens are collected here, obtained from Hospital and private practice. They are largely used in illustrating the lectures on Medicine and Surgery. There are also wax and papier-maché models.

In the past year the Museum has undergone a thorough revision, and a large number of specimens have been added. A printed catalogue is in course of preparation.

Graduates of the University are invited to contribute specimens

The Curator will be in the Museum every Saturday at 11 a.m. to demonstrate and explain the preparations to any students who may care to attend.

X.

LIBRARY.

The Library of the Medical Faculty now comprises between eight and nine thousand volumes, the largest special library connected with any medical school on the continent.

The standard text-books and works of reference, together with complete files of the leading periodicals are on the shelves. Students may obtain books on making a deposit of $5.00, which is refunded on returning the volumes.

XI.

McGILL MEDICAL SOCIETY.

This Society, composed of enregistered Students of the Faculty, meets once a week during the Summer Session, and fortnightly during the Winter, for the reading of papers and the discussion of medical subjects. It is presided over by a physician chosen by the members.

A reading room has been established in connection with the Society, in which the leading English and American Medical Journals are on file.

XII.

COST OF LIVING, &c.

This will, of course, vary with the tastes and habits of the Student, but the necessary expenses need not exceed those in smaller towns.

Good Board may be obtained from $15 to $25 per month. A list of Boarding-houses is prepared annually by the Secretary of the University, and may be procured from the Janitor at the Medical College.

XIII.

HOSPITALS.

MONTREAL GENERAL HOSPITAL.

The Montreal General Hospital is the most extensive clinical field in the Dominion. A much larger number of in-door and out-door patients receive treatment there than in any other Canadian Hospital. Last year's report shows that 2127 Medical and Surgical cases were treated in the wards, and the great proportion of these were acute cases, as may be gathered from the fact that the average duration of residence was only 23.6 days.

The large number of out-door patients that are treated in the Hospital—averaging from sixty to seventy daily—supply illustrations of most of the diseases of infants and children, of very many of the eye and skin, and of those chronic and ill-defined ailments which, as they do not require admission to the wards of a hospital, would not otherwise come under the observation of the Student.

The large number of patients affected with diseases of the eye and ear, now attending the out-door department, will afford Students ample opportunity to become familiar with all the ordinary affections of those organs, and to make themselves proficient in the use of the ophthalmoscope, and it is hoped that every student will thus seek to gain a practical knowledge of this important branch of Medicine and Surgery. Operations are performed on the eye by Dr. Buller, after the out-door patients have been seen, and Students are invited to attend the same, and, as far as practicable, to keep such cases under observation so long as they remain in the Hospital.

The shipping contributes many examples of accidents and surgical cases.

Clinical Clerks to both medical and surgical wards are appointed every three months, and each one during his term of service

conducts, under the immediate directions of the Clinical Professors, the reporting of all cases in the ward allotted him. The holding of one of these offices is found to be of the greatest possible advantage to Students, as affording a true *practical* training for his future professional life. They will be awarded on application at the end of each Session to final Students of that year, in order of their standing in the primary examination.

DRESSERS are also appointed to the Surgical wards and to the Out-door Department. For these appointments application is to be made to the Professor of Clinical Surgery, and to the Out-door attending Physicians.

The Operating Room (used also for a lecture room) is so constructed as to enable the Students to obtain a good view of the operations.

MONTREAL DISPENSARY.

ST. ANTOINE STREET.

About 10,000 patients yearly are treated at this Institution. The cases are of great variety, comprising a large number of pulmonary affections and children's diseases. Minor operations are of daily occurrence, and excellent practice is afforded in the application of splints and bandages. The attending Physicians furnish Students with all possible facilities. The hours of attendance are from 12-2 daily.

UNIVERSITY LYING-IN HOSPITAL.

This is under the direction of the Professor of Midwifery. Students who have already attended one course of his lectures are furnished with cases in rotation; they are advised to attend this Institution as much as possible duing the summer, when, since there are as many patients and not so many pupils as in winter, a larger proportion of cases falls to the share of each.

UNIVERSITY DISPENSARY.

This Dispensary was established two years ago for special clinical instruction in Diseases of Women ; and special clinics have been established at the same place, for Diseases of Children and for Diseases of the Skin.

Diseases of Women.—The difficulty of affording to Senior Students practical instruction in gynæcology is felt in most schools, as women will not present themselves for examination before a large class of men. The plan followed for the past five years with marked success has been the limitation of the number of Students to two or three, who, in rotation, assist at the examinations, and receive instruction in the diagnosis and treatment of uterine diseases and the use of gynæcological instruments. The attendance is on Tuesdays, Thursdays and Saturdays, 1-4 p.m.

Diseases of Children.—The clinic is on Tuesdays, Thursdays and Saturdays at 11 a.m., when the patients are seen and instruction given on the cases.

Diseases of the Skin.—The Surgeon in charge will attend every Monday and Friday at 2 p.m. Arrangements will be made whereby a limited number of students can be present on each occasion.

XIV.

STUDENTS' APPOINTMENTS.

Resident Medical Officers Montreal General Hospital, 3 annually, April 10.

Out-door Dressers.

Dressers in Eye and Ear Department.

Surgical Dressers (In-door).

Medical Clinical Clerks.

Post-mortem Clerks.

Clinical Clerk, Gynæcology.

" " Diseases of Children.

" " Dermatology.

" " Diseases of Nervous System.

Obstetrics.
Student Demonstrators of Anatomy, 4 3rd-year students.
Prosectors to Chair of Anatomy, 2.
Assistants in Practical Histology Course, 2.
Assistants in Practical Physiology Course, 4.
Assistants in Practical Chemistry, 2.

XV.

RULES FOR STUDENTS.

1. In the case of disorderly conduct, any Student may, at the discretion of the Professor, be required to leave the Class-room. Persistence in any offence against discipline after admonition by the Professor shall be reported to the Dean of Faculty. The Dean may, at his discretion, reprimand the Student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from Classes.

2. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session shall in each case be determined by the Faculty.

3. While in the College Students are expected to conduct themselves in the same orderly manner as in the Class-room.

4. When Students are brought before the Faculty under the above rules, the Faculty may reprimand, impose fines, disqualify from competing for prizes and honors, suspend from Classes, or report to the Corporation for expulsion.

XVI.

PAST SESSION.

The total number of students enregistered in this Faculty during the past year was 209, of whom there were, from—

Ontario,	110	New Brunswick,	22
Quebec,	50	P. E. Island,	5
Nova Scotia,	5	Newfoundland,	2
Manitoba,	1	West Indies,	3
		United States, 11	

The following gentlemen, 40 in number have passed their Primary Examination on the following subjects: Anatomy, Practical Anatomy, Chemistry, Practical Chemistry, Materia Medica and Pharmacy, Insttiutes of Medicine and Botany or Zoology. Their names and residences are as follows:

Armitage, Joseph H.....Newmarket, O.
Birkett, Herbert S.....Hamilton, O.
Cameron, Duncan A.....Strathroy, O.
Corsan, Douglas.....Woodstock, O.
Clark, J. L.....Waterloo, Q.
Craig, Murdock A.....Glen Water, O.
Crocket, W. C., B.A.....Fredericton, N.B.
Doherty, W. W.....Kingston, N. B.
Duffett, John L.....Leeds, Q.
Elder, John, B.A.....Huntingdon, Q.
Gairdner, Thos., M.....Bayfield, O.
Gibson, James B.....Cowansville, Q.
Gladman, George J.....Lindsay, O.
Grant, J. H. Y.....Ottawa, O.
Gustin, Smith.....London, O.
Hughes, P. H.....Strathroy, O.
Kinloch, John A.....Montreal, Q.
McCollum, Ed. P.....Duart, O.
McCuaig, Wm. J.....Vankleek Hill, O.
McDonald, H. J.....Alexandria, O.
McGannon, Thos. G.....Prescott, O.
McMeekin, Jas. W.....St. Catherines, O.
McKay, J. M.....River John, N.S.
Palmer, Guy F.....Ottawa, O.
Platt, Alf. T.....Picton, O.
Powne, N. G.....Nashville, Ten.
Pringle, W. P.....Cornwall, O.
Raymond, G. H., B.A.....Springfield, N.B.
Raymond, Alf.....Moulinette, O.
Robertson, F. D.....Lennoxville, Q.
Rowat, W. M. L.....Manotic, O.
Schmidt, A. T.....Faribault, Minn.
Seery, F. J.....Fredericton, N.B.
Smith, W. A.....Montreal, Q.
Turnbull, A. Russell.....Russell, O.
White, W. W., B.A.....St. John, N.B.

White, F. J.....Greens Pond, Nfld.
Wilson, Chas.....Cumberland, O.
Wishart, D. J., B.A.....Madoc, O.
Worthington, A. Norreys.....Sherbrooke, Q.

The following gentlemen, 34 in number, have fulfilled all the requirements to entitle them to the degree of M.D., C.M. from the University. In addition to the Primary subjects as mentioned above, they have passed a satisfactory examination, both written and oral, on the following subjects; in addition to those included in the above mentioned "Primary Examination": "Principles and Practice of Surgery, Theory and Practice of Medicine, Obstetrics and Diseases of Women and Children, Medical Jurisprudence and Hygiene,—and also Clinical Examinations in Medicine and Surgery conducted at the bedside in the Hospital:

Addison, Jas. L.....West Flamboro, O.
Barrett, Jos. A.....Fenagh Vale, O.
Clarke, Henry J.....Pembina, Dacotah.
Church, John R.....Aylmer, Q.
Cook, Sheldon E.....Aultsville, O.
Davies, Thos. B.....New Edinburgh, O.
Duncan, John A.....Duncanville, O.
Elderkin, Edwin, J.....Apple River, N.S.
Ferguson, W. A., B.A.....Richibucto, N.B.
Gooding, Chas. E.....Barbadoes, W. I.
Graham, Geo. A.....Hamilton, O.
Hutchison, Jas. A.....Goderich, O.
Johnson, C. H.....Almonte, O.
Johnston, Wyatt G.....Sherbrooke, Q.
Kelly, Patrick N.....Rochester, Minn.
Landor, Thos. H.....London, O.
McLellan, Jas. H.....Summerside, P.E.I.
McInerney, Jas. P.....Kingston, N.B.
McClure, Wm. B.A.....Lachute, Q.
McLean, G. N., B.A.....Pictou, N.S.
Meahan, John C.....Bathurst, N.B.
Merritt, David B., B.A.....Ottawa, O.
Nelson, W. M. F.....Montreal, Q.
O'Brien, Timothy.....Brudenell, O.
Porteous, Wm.....Pembroke, O.
Renner, W. Scott.....Jordan Station, O.

Ross, L. D..... Montreal, Q.
Rowell, Geo. B..... Abbottsford, Q.
Ruttan, Robt. F., B.A..... Napanee, O.
Smith, E. H..... Prescott, O.
Smith, W. A., De W..... Montreal, Q.
Smyth, H. E..... Worcester, Mass.
Walker, Felix D..... Launching, P.E.I.
Wilson, Samuel F., M.A..... Millstream, N.B.

Messrs. Hutchison and E. H. Smith are under age and await their majority before receiving the degree. Messrs. W. Johnston, Church and McClure, natives of the Province, await the completion of four years from the date of matriculation before receiving the degree.

The following have passed in Anatomy and Practical Anatomy

Grey, J. E.	Morgan, V. H.	Schmidt, A. F.
Orton, F. H.	Williams, J. F.	

Practical Anatomy.

Carter, L. H.	Cattenach, Walter C.

The following have passed in Chemistry.

Boone, S. W.	Grant, A.	Poole, Alf.
Cameron, K.	Haythorne, T. J.	Ross, L. F.,
De Cow, Douglas McG.	McMillan, A. D.	Stewart, W. G.
Earl, E. H.	Owens, J. G.	Stephen, G. C.
Graham, J.	Pomeroy, L. G. M.	Wilkins, H. P.

Practical Chemistry.

Blackader, E. H. P.	Gardner, G. C.	Orton, T. H.
Boone, S. W.	Gray, J. E.	Pomeroy, L. E. M.
Brown, W. D.	Kennedy, R. A.	Poole, Alf.
Cunningham	Kirkpatrick, R. C.	Ross, L. F.
De Cow, Douglas McG.	McKay, Eng.	Schmidt, Aug. F.
Flagg, J. D.	Morgan, V. H.	Stephen, G. C.
	Wilkins, H. P.	

The following have passed in Materia Medica.

Carter, L. H.	Kirkpatrick R. C.	Poole, Alf.
De Cow, Douglas McG.	Morgan, V. H.	Ross, L. F.
Gray, J. E.	McKay, Eugene	Stephen, G. C.
Haythorne, T. J.	Owens, J. G.	Schmidt, A. F.
Kennedy, R. A.	Orton, F. H.	Wilkins, H. P.
	Williams, Jas. F.	

The following have passed in Physiology.

Carter, L. H.
De Cow, Douglas McG.
Gray, J. E.
Johnstone, H. V.
Kennedy, R. A.
Kirkpatrick R. C.
Morgan, V. H.
MacKay, Eugene
McMillan, G. A.
Orton, F. H.
Poole, Alf.
Ross, L. F., B.A.
Schmidt, A. F.
Stephen, G. C.
Williams, Jas. F.

The following have passed in Medical Jurisprudence.

Allan, F. H. B.
Armitage, T. H.
Arthur, R. H.
Aylen, P.
Baird, T. A. D.
Barrett, J. A.
Burrows, F. N.
Carter, L. H.
Campbell, A. W.
Cassidy, G. A.
Cattenach, W. C.
Corsan, Douglas
Daly, W. G.
Darey, J. H., B.A.
Dazé, H.
Eberts, D. W.
Ferguson, W. A., B.A.
Finley, F. G.
Groves, Wesley
Gustin, Smith
Hallett, E. O.
Hanna, A.
Hurdman, H. T.
Harkin, Fred.
Irvine, R. T.
Johnson, C. H.
Johnson, H. D.
Klock, Wm. H.
Macdonald, H. J.
McCormack, N.
McClure, Wm., B.A.
McGannon, M. C.
McKenzie, J. T.
McLellan, J. H.
McMeekin, J. W.
McMillan, D. L.
McPherson, D. T.
Merritt, D. P.
Osborne, Alex. B.
Owens, J. G.
Palmer, G. F.
Platt, A. T.
Powell, F. H.
Robertson, A. McD.
Ruttan, R. F., B.A.
Shibley, J. L., B.A.
Trapnell, H. E.
Tupper, Freeman
Wood, E. G.
Wilson, J. A. R.

The following have passed in Hygiene:—

Allan, J. H. B.
Armitage, T. H.
Arthur, R. H.
Baird, T. A.
Boggs, G. W.
Bowen, W., B.A.
Burrows, F.
Campbell, A. W.
Carter, L. H.
Cassidy, A.
Cattenach, W. G.
Corsan, D.
Craig, M. A.
Daly, W. S.
Darey, J. H., B.A.
Dazé, H.
Doherty, W. W.
Eberts, D. W.
Finley, F. G.
Flagg, J. D.
Groves, W.
Hallett, E.
Hanna, A. E.
Harkin, F.
Hurdman, R. F.
Irvine, R. T.
Johnson, H. D.
Johnstone, H. V.
Klock, W. H.
Mattice, J. L.
McCormack, H.
McDonald, H. J.
McGannon, M. C.
McLellan, J.
McMeekin, J.
Mattice, J. L.
McMillan, D. L.
McPherson, D. F.
Osborn, A. B.
Owens, J. G.
Palmer, G. F.
Platt, A. T.
Pomeroy, L. E. M., B.A.
Powell, F. H.
Robertson, A. McD.
Shibley, J. L., B.A.
Stephen, Geo. C.
Trapnell, H. E.
Wilson, J. A. K.
Wood, E. G.

The following have passed in Pathology :—

Allan, J. H. P.
Aylen, P.
Armitage, T. H.
Arthur, R. H.
Baird, T. A. D.
Barrett, J. A.
Burrows, F. N.
Campbell, A. W.
Cameron, D. H.
Carter, L. H.
Cassidy, G. A.
Cattenach, W. C.
Corsan, Douglass
Craig, M. A.
Daly, W. S.
Dazé, H.
Darey, J. H , B.A.
Eberts, D. W.
Ferguson, W. A., B.A.
Finley, F. G.
Gustin, Smith
Groves, W.
Hanna, A.
Hallett, E. O.
Harkin, F. M.
Hurdman, H. T.
Irvine, Robt. T.
Johnstone, H. V.
Johnson, H. D.
Klock, W. H.
McClure, Wm., B.A.
McCormack, W.
McGannon, M. C.
McLellan, J. H.
McMeekin, J. W.
McDonald, H. J.
McMillan, D. L.
McPherson, D. T.
Merritt, D. P.
Osborne, Alex. B.
Owens, J. G.
Palmer, G. F.
Platt, A. T.
Powell, F. H.
Robertson, A. McD.
Ruttan, R. F., B.A.
Shibley, J. L., B.A.
Trapnell, H. E.
Wilson, J. A. R.
Wood, E. G.

The following have passed in Physics :—

Aborn, J. P.
Berry, J. A.
Boggs, G. W.
Boone, S. W.
Boyd, J.
Cameron, K.
Christie, W.
Cowie, A. W.
Donald, W. M.
Easton, C. L.
Edgar, C. J.
Ellis, W. E.
Evans, E. J.
Fillmore, E.
Flagg, D. J.
Fraser, J. M.
Gardner, A. W.
Grant, A. J.
Hall, W.
Hall, A. G.
Haentschel, C. W.
Holden, E. D.
Johnson, J. M.
Kelly, J. A.
Lafleur, H. A.
McDonald, D. D.
McDonald, A. D.
Norman, T. J.
Pomeroy, L. E. M.
Pringle, W. P.
Powne, M. G.
Richardson, G. C.
Ritchie, A. F.
Ross, D. L.
Schmidt, A. F.
Scully, D. J.
Sinclair, Duncan
Stephen, G. C.
Stewart, W. G.
Williams, J. F.
Williams, S. P.
Wilkins, H. P.

The following have passed in Botany :—

	Class		*class*
Powne, N. G	1st	Edgar, E. J	1st
Dickson, J. A	1st	McDonald, A. D	1st
Norman, S. J	1st	Pringle, N. R	1st
Fraser, J. M	1st	Scully, D. J	1st
Hall, Wm	1st	Haentschel, A. W	1st
Evans, C. J	1st	Williams, S. P	1st
McDonald, D. D	1st		

	Class		class
Ferguson, J. A.	2nd	Filldmore, E. W.	3rd
Donald, W. M.	2nd	Boggs, G. W.	3rd
Johnson, J. W.	2nd	Cameron, J. J.	3rd
Easton, C. L.	2nd	Quirck, E. L.	3rd
Kelly, J. A. A.	2nd	Berry, J. A.	3rd
Brunette, J. F.	2nd	Boyd, J.	3rd
Cowie, A. M.	2nd	Bowen, Wm.	3rd
Richardson, G. L.	2nd	Hamer, A. L.	3rd
Ross, D. L.	2nd	Parker, W. D.	3rd
Aborn W. H.	2nd	Polthier, C. J.	3rd
Ellis, W. G.	2nd	Ferguson, W. D. S.	3rd
Loucks, F.	2nd	Davis, A. H.	3rd
Hall, A. G.	2nd	Giles, A. B.	3rd
		Aylen, J. P.	3rd
Sinclair, D.	3rd	Ritchie, R. F.	3rd
McKinnon, H.	3rd	Woodruff, F. A.	3rd

The following have passed in Histology :—

Aylen, P.	Ferguson, J. A.	McDonald, D. D.
Berry, J. A.	Ferguson, W. D.	McDonald, A. D.
Boggs, G. W.	Fillimore, E.	Norman, I. J.
Boone, S. W.	Flagg, J. D.	Parker, W. D.
Bowen, Wm.	Fraser, J. M.	Pomeroy, L. G. M.
Boyd, J.	Gardner, A. W.	Powne, N. G.
Cameron, K.	Grey, J. E.	Pringle, W. P.
Christie, W.	Hall, A. G.	Ross, D. L.
Cowie, A. W.	Hall, W.	Richardson, G. C.
DeCow Douglass McG.	Haentschel, C. W.	Sinclair, Duncan.
Dickson, J. A.	Hamer, A. L.	Scully, D. J.
Donald, W. M.	Johnson, J. W.	Williams.
Edgar, C. J.	Kelly, P. N.	Woodruff, F. A.
Ellis, W. E.	Loucks, F.	Wilkins, H. D.
Evans, E. J.	Lafleur, B. A.	MacKinnon. Hugh

MEDALS, PRIZES AND HONOURS.

The Holmes Gold Medal for the best Examination in the Primary and Final Branches was awarded to Wm. Adam Ferguson, B.A., of Richibucto, N.B.

The Prize for the best Final Examination was awarded to James Paterson McInerney of Kingston, N.B.

The Prize for the best Primary Examination was awarded to Smith Gustin, o London, Ont.

THE SUTHERLAND GOLD MEDAL was awarded to John Elder, B.A., of Huntingdon, Q.

The following gentlemen, arranged in order of merit, deserve honourable mention :

In the Primary Examination, Norman G. Powne, H. S. Birkett, J. A. Kinloch, J. Elder, B.A., D. Corsan, W. W. White, B.A., Wm. J. McCuaig, W. C. Crockett, B.A., G. H. Raymond, B.A., John L. Duffett, C. W. Wilson, F. J. Seery, Geo. B. Rowat, A. Russell Turnbull, E. P. McCollum, and G. F. Palmer.

In the Final Examination, Geo. A. Graham, R. F. Ruttan, Wyatt, J. G. Johnston, Edwin J. Elderkin, Thos. B. Davies.

PROFESSORS' PRIZES.

BOTANY.—Prize, Norman E. Powne, of Nashville, Tenn. For the best collection of Plants—Prize, J. E. Gray of Coldstream, Ont.

PRACTICAL ANATOMY.—Demonstrator's Prizes, 2nd year Herbert S. Birkett of Hamilton, Ont.; 1st year, Donald L. Ross of Winthrop, Ont.

PATHOLOGY.—Prize awarded to Edwin G. Wood of Londesboro, Ont., and Honourable Mention to Fred. G. Finley, Montreal, Q.

McGill University—Faculty of Medicine.

FIRST AND SECOND YEAR, TIME TABLE, 1883-84.

A.M.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Anatomy, Examination.	Anatomy.	Anatomy.	Anatomy.	Anatomy.	Hygiene, 2nd or 3rd Year.
10	Practical Chemistry, 2nd Year, till 12 o'clock.	Botany, 1st Year.	Practical Chemistry. 2nd Year.	Botany, 1st Year.	Practical Chemistry, 2nd Year.	Botany Demonstration.
11	Out-Patients, Montreal General Hospital.	Out-Patients, Montreal General Hospital.	Out-Patients, Montreal Gen'l Hospital.	Out-Patients, Montreal Gen'l Hospital.	Out-Patients, Montreal Gen'l Hospital.	Out-Patients, Montreal Gen'l Hospital.
P.M. 2	Materia Medica, for 2nd Year only.	Materia Medica. 2nd Year only.	Materia Medica. 2nd Year only.	Materia Medica. 2nd Year only.	Materia Medica Examination.	Practical Physiology, 2nd Year.
3	Physiology Examination.	Physiology.	Physiology.	Physiology.	Histology, 1st Year. Lecture.	
4	Practical Histology.	Practical Histology.	Practical Histology.	Practical Histology.	Histology Demonstrations.	
5	Chemistry.	Chemistry.	Chemistry.	Chemistry.	Chemistry Examination.	
8 to 10	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	

N.B.—The Demonstrator's Hours in the Dissecting Room are from 10-12 a.m. and from 8-10 p.m.

* The First and Second Year Students are urged to attend the Out-Patients Practice whenever possible.

McGill University.—Faculty of Medicine.

THIRD AND FOURTH YEAR, TIME TABLE, 1884-85.

A.M.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Medical Jurisprudence.	General Pathology.	Medical Jurisprudence.		Medical Jurisprudence.	
10	Surgery, Examination.	Surgery.	Surgery.	Surgery.	Surgery.	Morbid Anatomy Demonstrated.
11	Midwifery.	Gynæcology.	Midwifery.	Gynæcology.	Midwifery.	
P.M. 1-2.30.	Medical Clinic, 4th Year. Surgical Clinic, 3rd Year.	Surgical Clinic, 4th Year. Medical Clinic, 3rd Year.	Medical Clinic, 4th Year. Surgical Clinic, 3rd Year.	Medical Clinic, 4th Year. Surgical Clinic, 3rd Year.	Medical Clinic, 4th Year. Surgical Clinic, 3rd Year.	Medical Clinic, 4th Year. Surgical Clinic, 3rd Year.
2	Materia Medica, 3rd Year.					
2.30	Clinical Gynæcology, at	University Dispensary,	4th year students in groups			
2.30	Ophthalmic and Aural Cli	nic daily.				
	Clinic on Diseases of the	Skin. University Dispen	sary, Monday and Friday.			
	Clinic on Diseases of Chil	dren. University Dispen	sary, Tuesday and Satur	day.		
4	Medicine, Examination.	Medicine.	Medicine.	Medicine.	Medicine.	
5	Ophthalmic and Aural Surgery Lecture.					

Autopsies are performed at the General Hospital between 12 and 2 p.m.

Faculty of Law.

THE PRINCIPAL (Ex-officio).

Professors :—LAFLAMME.
KERR.
TRENHOLME.
WURTELE.
RAINVILLE.

Professors :—ARCHIBALD.
LAREAU.
HUTCHISON.
ROBIDOUX.
DAVIDSON.

Lecturer :—HART.

Dean of Faculty.—Professor W. H. KERR, Q.C., D.C.L.

Registrar of the Faculty.—J. S. ARCHIBALD, M.A., B.C.L.

Corporation Examiners for Degrees.—Professors N. W. TRENHOLME, M.A., B.C.L., and EDMOND LAREAU, B.C.L.

Matriculation Examiners of the Faculty.—Professors J. S. ARCHIBALD, M.A., B.C.L., and EDMOND LAREAU, B.C.L.

The Classes in Law will commence on Wednesday, the First o October, 1884, and will extend to March 31st, 1885.

The Examinations will be held in the William Molson Hall, McGill College Building, from 4 to 6 p.m., on the 12th, 13th, 16th, 17th, 18th, 19th, 20th days of March, 1885.

The Lecture Rooms of the Faculty are situated in the Molson's Bank Chambers, in St. James street.

The complete course of study in this Faculty extends over three years; but it may be shortened to two years, when the student matriculates in the third year of his indentures.

Students who avail themselves of the privilege of attending two years only, will nevertheless be required to pass an examination in the subjects comprised in the three years' course.

Matriculated Students who do not take the whole course are classed as Partial Students, and are not entitled to proceed to the Degree of B.C.L.

Occasional Students will be received without matriculation, for attendance on any particular series of Lectures.

Students who have completed their course of three years,—or of two years, if they have commenced in the third year of their indentures,—and have passed a satisfactory examination, will be entitled, upon the certificate and recommendation of the Faculty, to the Degree of Bachelor of Civil Law.

COURSE OF STUDY.

FIRST YEAR.

Legal Hishory ..... Professor LAREAU.

Civil Law :

Persons, Property, Ownership ..... Professor ROBIDOUX.

Roman Law :—

Institutes of Justinian, B. I, Gaius, C. I, Maine, Chapters I to IV ..... Professor TRENHOLME.

Civil and Commercial Law :

Commercial Agency ..... Professor DAVIDSON.

Civil Procedure :

Introduction ..... Professor HUTCHINSON.

Criminal Law ..... Professor ARCHIBALD.

Notarial Course :

Theory aud Practice of Notarial Deeds and Proceedings ..... Lecturer HART.

SECOND YEAR.

Legal Bibliography .....
Civil Law :
Rents, Transaction, Suretyship ..... Professor LAREAU.

Civil Law :—

Usufruct, Real Servitudes, Gifts and Wills, Substitutions ..... Professor ROBIDOUX.

International Law : .....
Civil and Commercial Law :—
Sales ..... Professor KERR.

Roman Law :—

Institutes of Justinian, B.II. and B.III. to Title 14.
Gaius, Chaps. II. and III.....
Maine, Chapters V. to VIII..... } Professor TRENHOLME.

Commercial Law :—

Partnership.....
Corporations.....
Bills of Exchange..... } Professor DAVIDSON.

Civil Procedure :—

First Part..... Professor HUTCHINSON.

Criminal Procedure and Election Law..... Professor ARCHIBALD.

Notarial Course :—

Theory and Practice of Notarial Deeds and Proceedings..... } Lecturer HART.

THIRD YEAR.

Civil Law :—

Privileges and Hypothecs.....
Prescription .....
Imprisonment in Civil Cases..... } Professor LAREAU.

Civil Law :—

Successions.....
Marriage Covenants.....
Dower..... } Professor ROBIDOUX.

International Law.....
Commercial Law :—
Carriage of Persons.....
Insurance.....
Bottomry and Respondentia..... } Professor KERR.

Roman Law :—
Institutes of Justinian, B. III. from Title 14....
Maine, Chapters IX. and X.....
Civil Law :—
Mandate.....
Loan.....
Deposit.....
Pledge.....
Evidence..... } Professor TRENHOLME.

Commercial Law :—

Merchant Shipping.....
Affreightment .....
Insolvency..... } Professor DAVIDSON.

Civil Procedure :—

Second Part..... Professor HUTCHINSON.

Criminal Procedure and Election Law..... Professor ARCHIBALD.

Notarial Course :—

Theory and Practice of Notarial Deeds and Proceedings..... } Lecturer HART.

FACULTY REGULATIONS.

1. Any person desirous of becoming a Matriculated Student, shall apply to the Dean of the Faculty for examination and entry in the Register of Matriculation, and shall procure a ticket of Matriculation and tickets of admission to the Lectures for each Session of the Course. (Students are requested to call on the Registrar, who will furnish them with the necessary forms.)

2. Candidates for Matriculation shall pass an examination, satisfactory to the Faculty of Law, in Latin, French, English, Mathematics, and Ancient and Modern History, and the books upon which such examination shall be had shall be from time to time fixed by the Faculty.

II. MATRICULATION IN THE FACULTY OF LAW.

The books at present prescribed are the following :—

Latin.—Virgil, Æneid, Book I. ; Cicero, Orations I. and II., against Catiline ; Latin Grammar.

French.—De Fivas' "Grammaire des Grammaires ;" *Molière, 'Le Bourgeois Gentilhomme ;' †Translation into French of Macaulay's Essay on Frederick the Great.

Exercises in composition and grammatical analysis, in English and French.

Mathematics.—Arithmetic ; Algebra to the end of simple equations ; Euclid, Books I., II., III.

History.—White's Outline of Universal History (or any equivalent manual), *Green's Short History of the English People ; Miles' School History of Canada ; †Duruy, Histoire de France.

Literature.—*Collier's Biographical History of English Literature ; † Lahorpe, Cours de Litérature ; †Lefranc, Cours de Litérature.

Rhetoric.—Whately's Rhetoric ; Blair's Lectures (small edition).

Philosophy.—*Whately's Logic ; †La Logique de Port Royal ; †Cousin, Histoires de la Philosophie ; *Stewart's Outline of Moral Philosophy.

N.B.—The works mentioned above preceded by an asterisk are for English students only. Those preceded by a cross are for French students only. The remainder are for both English and French.

3. Students in Law shall be known as of the First, Second and Third Years, and shall be so graded by the Faculty. In each year, Students shall take the studies fixed for that year and those only, unless by special permission of the Faculty.

4. The Register of Matriculation shall be closed on the 1st of November in each year, and return thereof shall be immediately made by the Dean to the Registrar of the University. Candidates applying thereafter may be admitted on a special examination to be determined by the Faculty; and, if admitted, their names shall be returned in a supplementary list to the Registrar.

5. Persons desirous of entering as Occasional Students shall apply to the Dean of the Faculty for admission as such Students, and shall obtain a ticket, or tickets, for the class or classes they desire to attend.

6. Students who have attended Collegiate courses of study in other Universities for a number of terms or sessions, may be admitted, on the production of certificates, to a like standing in this University, after examination by the Faculty.

7. All Students shall be subject to the following regulations for attendance and conduct:—

(1) A class-book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted; and the said class-book shall be submitted to the Faculty at a meeting to be held between the close of the lectures and the commencement of the examinations; and the Faculty shall, after examination of such class-book, decide which students shall be deemed to have been sufficiently regular in their attendance to entitle them to proceed to the examination in the respective classes.

(2) Punctual attendance on all the classes proper to his year is required of each student. Professors will note the attendance immediately on the commencement of their lectures, and will omit the names of Students entering thereafter, unless satisfactory reasons are assigned. Absence or tardiness, without sufficient excuse, or inattention or disorder in the Class-room, if persisted in after admonition by the Professor, will be reported to the Dean of the Faculty, who may reprimand the Student or report to the Faculty, as he may decide. While in the building, or going to or from it, students are expected to conduct themselves in the same orderly manner as in the Class-rooms. Any Professor observing improper conduct in the Class-rooms, or elsewhere in the building, will admonish the student; and, if necessary, report him to the Dean.

(3) When Students are reported to the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, disqualify from competing for prizes or honours, suspend from classes, or report to the Corporation for expulsion.

(4) Any Student injuring the furniture or building will be required to repair the same at his own expense, and will, in addition, be subject to such penalty as the Faculty may see fit to impose.

(5) The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session shall in each case be determined by the Faculty.

(6) All cases of discipline involving the interests of more than one Faculty, or of the University generally, shall be reported to the Principal, or, in his absence, to the Vice-Principal.

8. At the end of every Session there shall be a general examination of all the Classes, under the Superintendence of the professors, and of such other Examiners as may be appointed by the Corporation, which examination shall be conducted by means of printed questions, answered by the students in writing in the presence of the Examiners. The result shall be reported as early as possible to the Faculty, which shall decide the general standing of the students accordingly.

9. Each Professor shall deliver at least two Lectures in each week. Each Lecture shall be of one hour's duration ; but the Professors shall have the right from time to time to substitute an examination for any such Lectures.

10. No Student shall be considered as having kept a Session, unless he shall have attended regularly all the courses of Lectures, and shall have passed the Sessional Examinations to the satisfaction of the Faculty, in all the classes of his year.

11. The Faculty shall have the power, upon special and sufficient cause shown, to grant a dispensation to any Student from attendance on any particular Course or Courses of Lectures, but no distinction shall, in consequence, be made between the Examinations of such Students and those of the Students regularly attending Lectures. No Student shall pass for the degree of B.C.L., unless he has prepared a Thesis, either in French or English, which shall have been approved by the Faculty.

12. The subject of such Thesis shall be left to the choice of the Student, but it must fall within the range of study of the Faculty, and shall not exceed twenty pages of thirty lines each. Each Student shall on or before the first day of February forward such Thesis to the Registrar of the Faculty, marked with the *nom de plume* which he shall adopt, and accompanied with a sealed envelope, bearing the same *non de plume* on it, and containing inside his name and the subject of his Thesis, and the envelope shall be opened in presence of the Faculty after the final decision shall be given on the respective merits of the several Theses.

13. The Elizabeth Torrance Gold Medal, in the Faculty of Law, shall be awarded to the Student who being of the Graduating Class, having passed the Final Examinations, and having prepared a Thesis of sufficient merit in the estimation of the Faculty to entitle him to compete, shall take the highest marks in a special Examination for the medal, which examination shall include the subject of Roman Law.

14. Every Candidate before receiving the Degree of B.C.L. shall make the following declaration :

Ego A. B. polliceor, me, pro viribus meis, studiosum fore communis hujus Universitatis boni, operamque daturum ut decus ejus ac dignitatem amplificem et officiis omnibus ad Baccalaureatus in Jure Civili gradum pertinentibus fungar.

15. The fees exigible in this Faculty are as follows :

Matriculation Fee	$ 5 00
Sessional Fee by Ordinary Students	$36 00
Sessional Fee by Occasional or Partial Students, for each course	5 00
Graduation Fee, including Diploma and Case	10 00
Additional Fee for Notarial Students	10 00

Matriculation and Sessional Fess must be paid on or before Nov. 1st, and if not so paid the name of the Student shall be removed from the books, but may be re-entered by consent of the Faculty, and on payment of a fine of not less than $3. Students already on the books of the University shall not be required to pay any Matriculation Fee.

16. The Course of Lectures upon the Theory and Practice of Notarial deeds and proceedings is optional to candidates for the profession of law, but is compulsory upon candidates for the Notarial profession : the latter may omit the subject of civil procedure.

17. Notarial students shall rank for general standing upon their examination in the notarial class, and failure to pass such examination shall have the same effect as failure in any other compulsory subject.

18. Occasional students may be admitted into said class on such terms as shall be arranged by the Faculty.

19. Every Candidate for the Degree of D.C.L. in Course, under Chap. VIII., Section 4, of the Statutes of the University, shall be required to pass within four years from his graduation as B.C.L., such examination as shall be prescribed by the regulations of the Faculty of Law; unless he shall have graduated as a B.A. of this University, either in Course or *ad eundem*. And not less than two months before proceeding to the Degree of D.C.L., the Candidate shall deliver to the Faculty of Law twenty-five printed copies of a Thesis or Treatise upon a subject selected or approved by the Faculty; such Thesis to contain not less than twenty-five octavo pages of printed matter, and possessing such a degree of literary and scientific merit as shall, in the opinion of the Faculty, justify them in recommending him for that Degree. And in addition to the foregoing qualifications, the Candidate shall pay to the Secretary of the Faculty annually during term, for the retention of his name on the books of the Faculty, during the said period of twelve years, a fee of two dollars, to be added to the Library fund of the Faculty.

Except as regards the Thesis, this regulation applies only to those who have taken the degree of B.C.L., subsequently to October, 1873. The examination under the above rule is as follows :

(1) *International Law* :—

Phillimore : Wharton, Conflict of Laws : Fœlix, Droit International Privé.

(2) *Roman Law* :—

Gaii Commentarii, IV. ; Pauli Sententiæ ; Pomponii Fragmentum de origine juris, D. 1. 2. : Novellæ Justiniani, cxxviii. cxxvii ; Ortolan, Institutes de Justinien, Vol. i. ; Mommsen's History of Rome.

(3) *Constitutional Law* :—

Hallam, Constitutional History of England ; May, Constitutional History of England ; Mill, Representative Government ; The British North America Act, and cases thereunder.

University School Examinations.

1885.

UNDER THE SUPERINTENDENCE OF McGILL UNIVERSITY, MONTREAL, AND THE UNIVERSITY OF BISHOP'S COLLEGE, LENNOXVILLE.

FOR CERTIFICATES OF THE UNIVERSITY AND THE TITLE OF ASSOCIATE IN ARTS.

These Examinations are held in Montreal and at Lennoxville, and local centres may be appointed elsewhere on application to the Principal of either University, accompanied with satisfactory guarantee for the payment of necessary expenses.

The Examinations are open to Boys or Girls, under 18 years of age, from any Canadian School.

SUBJECTS OF EXAMINATION.

I. PRELIMINARY SUBJECTS.

English Reading	30	*Marks.*
English Dictation	40	do
English Grammar (as in Morell or Smith)	50	do
Arithmetic (all the ordinary rules, including square root)	90	do
Geography (acquaintance with the maps of each of the four Continents, and of British North America)	50	do
British History (as in Collier), and *Canadian History* (as in Jeffers)	50	do

The Candidates will also be examined in the Gospels, unless objection be made thereto by their parents or guardians, and creditable answering in the same will be mentioned in the Certificate.

Additional marks, not exceeding 20, may be allowed in the Dictation paper, for quality of handwriting.

II. Optional Subjects.

Section 1. Languages.

Latin :—	
Hoace, Odes, Bk. I., Odes 1 to 12 exclusive. Cicero, Cato Major. Virgil, Æneid, Bk. I., vss. 1-304.	150 marks.
Greek :—	
Xenophon, Anabasis, Bk. V. Homer, Iliad, Bk. IV.	150 do
French.	
Grammar. Darey's Lectures Françaises.	120 do
German.	
Grammar. Adler's Reader, Section II. Translation from German into English.	120 do

Section 2. Mathematics, Natural Philosophy, &c.

Geometry.	
Euclid, I. II. III.....	150 do
Algebra.	
Elementary Rules, Involution, Evolution, Fractions, Simple Equations.	150 do
Plane Trigonometry.	
Measurement of Angles, Trigonometrical Ratios of a single Angle and of two Angles, Complemental and Supplemental Angles, and the Solution of Right-Angled Triangles.	100 do
Natural Philosophy.	
Mechanics and Hydrostatics (as in any ordinary School Text-Book).	100 do
Geometrical and Freehand Drawing.....	100 do

Section 3. English.

The English Language.	
Philology (as in Smith's or Mason's Grammar and Peile's Primer). Trench's Study of Words.	120 do
English Literature.	
English Literature, Primer by S. A. Brooks. Shakespeare, Julius Cæsar. Scott's Lady of the Lake.	120 do
History.—(As in Primers of Greece and Rome, and Collier's Great Events).....	100 do
Geography.—Physical, Political and Commercial.....	100 do

Section 4. Natural Science, &c.

Zoology (as in Nicholson's Introductory Text-Book)	100	do
Botany (as in Gray's "How Plants Grow")	100	do
Geology (as in Dana's Text-Book)	100	do
Chemistry (as in Miller's Introduction to Inorganic Chemistry, pp. 1 to 198)	100	do

GENERAL REGULATIONS.

1. Candidates will not be considered as having passed in any subject unless they have obtained at least *one-third* (and, in the case of Reading and Dictation *two-thirds*) of the total number of marks obtainable in that subject.

2. Every Candidate for the Certificate of Associate in Arts, or for the Junior Certificate, must pass in all the Preliminary Subjects.

3. Every Candidate for the Certificate of Associate in Arts must also pass in the Optional Subjects contained in one of the three following groups :

First.—(*a*) Two Subjects of Section 1, one of them being Latin or Greek.
(*b*) Geometry or Algebra of Section 2.
(*c*) Two of the eight Subjects of Sections 3 and 4.

Second.—(*a*) French and German of Section 1.
(*b*) Geometry or Algebra of Section 2.
(*c*) Two Subjects of Section 3.
(*d*) One Subject of Section 4.

Third.—(*a*) One Subject of Section 1.
(*b*) Two Subjects of Section 2.
(*c*) Three of the eight Subjects of Sections 3 and 4.

4. Candidates for Junior Certificates must pass in the following :
(*a*) One Subject of Section 1.
(*b*) One Subject of Section 2.
(*c*) One of the eight Subjects of Sections 3 and 4.

5. The total number of Marks gained by every Candidate, including both Preliminary and Optional Subjects, shall be added up, and the Candidates arranged in a printed list, at the close of the Examination, in the order of these totals. No Marks in any subject shall be counted unless the Candidate has gained at least the minimum number of Marks required for passing in that subject. The Marks in not more than three subjects of section 1, three subjects of section 2 and three subjects selected from sections 3 and 4 will be counted. (If the candidate take neither Latin or Greek, the marks in four subjects from Sections 3 and 4 will be counted).

6. Candidates who obtain at least *two-thirds* of the marks in any Optional Subject will be entitled to a Certificate of creditable answering in that Subject, provided they satisfy the conditions for either Associate in Arts or Junior Certificate.

7. In the case of those who pass in Latin, Greek, English, Algebra and Geometry, the examination will be received as the Matriculation Examination in the Faculties of Arts of the two Universities. In the case of those who have passed in Geometry, Algebra and English, the examination will be received for Matriculation in the Faculty of Applied Science of McGill University.

Candidates who fail, or who may be prevented by illness from completing their examinations, may come up at the next examination without extra fee, unless in the interval they have become disqualified by age, this disqualification not to apply in cases of illness duly certified by medical authority.

8. The Head Master or Mistress of each school must certify to the character and ages of the pupils sent up for examination.

9. The examinations will begin on Monday, June 1st, at 9 a.m.

10. Lists of the names, ages, and Optional Subjects to be taken by the candidates, together with the fee of $4, must be transmitted to the Secretary of McGill University on or before May 1st. (Blank forms and copies of the Regulations will be furnished on application.)

CLASSICAL SUBJECTS FOR 1886.

Latin.—Cæsar.—Bell, Gall. Bk. III. Virgil.—Aeneid, Bk. VI., vss. 1-371. Cicero.—Pvo Marcello.

Greek.—Homer.—Iliad, Bk. IV. Arrian.—Bk. III., Capp. 1-20, inclusive.

Regulations for the Higher Examination of Women.

UNDER THE SUPERINTENDENCE OF McGILL UNIVERSITY, MONTREAL, AND THE UNIVERSITY OF BISHOP'S COLLEGE, LENNOXVILLE.

Women over sixteen years of age, who have already received the Senior or Junior Certificates of the University, or who present certificates of Education and examination accepted as equivalent by the Examiners, may enter on the following Examinations, and, on passing the same, shall be entitled to Certificates as Senior Associates in Arts.

The Examinations will be held at the same time and in the same manner with those for School Certificates, and local centres may be established on similar conditions.

The Examinations are divided into Imperative and Optional, as follows:—

I. IMPERATIVE.

These subjects consist of the following groups, in each of which every candidate will be required to take at least one-third of the number of marks.

(*a*) *Classics.*

Latin and History.—

Tacitus :—Germania.
Virgil :—Æneid, Book VI.
Latin Prose Composition.—Text-book :—Dr. Smith's Principia Latina, Parts IV. and V.
History of Rome.—Text-book :—Liddell's History of Rome.

——200 marks.

Greek and History.

Euripides :—Alcestes.
Xenophon :—Hellenics, Book I.
History of Greece.—Text-book :—Dr. Smith's History of Greece.

——200 marks.

Candidates may take (*a*) either Greek *or* Latin as above, or (*b*) the Greek *and* Latin subjects of the McGill University Intermediate Examination.

(*b*) *Mathematics.*

Arithmetic.
Euclid, Bks. I. II. III. IV., Defs. of Bk. V., Bk. VI., omitting Props. 27, 28, 29.

Algebra, inclusive of Surds, Quadratic Equations and Progressions.
Plane Trigonometry, including the measurement of Heights and Distances, with the nature and use of Logarithms.

—— 200 marks.

(In the last subject, Candidates are referred to Galbraith and Haughton's Trigonometry, or similar text-books.)

(*c*) *Logic and English.*

Logic, as in Jevons' Elementary Lessons.
Anglo-Saxon, as in Earle's Manual.
Philology, as in the introduction of Earle's Philology.
English History, as in Collier.

—— 200 marks.

II. OPTIONAL.

In addition to the above, Candidates must pass in at least one, and not more than three, of the following subjects, creditable answering in which will be mentioned in their certificates :

(*a*) *Chemistry.*

Inorganic, as in Roscoe, with some knowledge of Chemical Manipulation.

(*b*) *Botany.*

As in Gray's Text book, with some knowledge of Canadian Botany.

(*c*) *Mathematical Physics.*

Mechanics (Statics and Dynamics) ; Hydrostatics.
(Candidates are referred to Galbraith and Haughton's Mechanics and Hydrostatics, Hamblin Smith's Statics and Hydrostatics, or similar Text-books.

(*d*) *Experimental Physics.*

Any two of the following :—Heat, Light, Electricity and Magnetism, Sound.
Candidates will be expected to shew in the Examinations that they have made the experiments themselves or have seen them made. For range of study, Candidates are referred to Ganot's Elementary Treatise on Physics, translated by Atkinson.)

(*e*) *Biology and Geology.*

Classification of Animals and Plants, as in Dawson's Handbook and Gray's Text-book.
Geology, as in Dana's Manual
Palæontology, as in Nicholson's Manual.
A practical knowledge of Minerals, Rocks and Fossils will be expected.

(*f*) *Mental Philosophy.*

Thomson's Outlines of the Laws of Thought.
Murray's Outline of Hamilton's Philosophy, Introduction, and Part I. to the end of Chapter V.

(*g*) *English Literature and Ancient History.*

Chaucer—Prologue to Knight's Tale.
Shakespeare—Macbeth and Merchant of Venice.
Ancient History of the East—Lenormant and Chevalier.
History of Greece and Rome (if not taken in the imperative), as in Smith and Liddell.

(*h*) *French Language and Literature with Ancient History.*

Grammatical Questions.
Molière, le malade imaginaire.
Racine, Phèdre.
C. Delavigne, les Enfants d'Edouard .
Bonnefon, Les Ecrivains célèbres de la France, 16th and 17th centu ries.
Translation from English into French, Macaulay's Essay on Milton.
With History, as under (*g*).

(*i*) *German Language aud Literature with Ancient History.*

General questions on Grammar (Schmidt's German Guide, Parts 2 and 3.)
Account of the life and Principal Works of Goethe and Schiller, with a special study of Schiller's "Maria Stuart."
Adler's Progressive Reader, Nos. 5, 6, 8, 9, 12, 14 of Section IV.
Translation from English into German.
With History, as under (*g*)

(*k*) *Greek or Latin with History.*

If not taken in the imperative part of the Examination.

In the Optional Subjects, the Examinations held under the Ladies' Educational Association of Montreal, when held by Professors or Examiners of either University, and certified in writing by them as equivalent to subjects stated above, may be accepted by the Examiners in any subject or portion of a subject.

In any of the Optional Subjects, Candidates must receive at least one-third of the marks in order to pass, and at least one-half to receive mention of creditable answering.

(It is understood that the Optional Subjects will be reckoned as approximately of equal value.)

Successful Candidates will be arranged in the lists in the order of the aggregate of the marks which they have obtained in the whole of the Imperative subjects and one only of the Optional.

The Fee for the Examination is eight dollars, and must be paid before the Examination. In case of failure, the Candidate may come up at the next Examination without additional fee.

Candidates are required to state in writing to the Secretary of either University the Optional Subject or Subjects in which they propose to be examined, at least one month before the date of the Examination.

McGill Normal School.

1884–85.

Government of the School.

Under the Regulations for the establishment of Normal Schools in the Province of Quebec, the Superintendent of Education is empowered to associate with himself for the direction of one of these Schools the Corporation of McGill University, Montreal. In accordance with this arrangement, the Provincial Protestant Normal School is affiliated with the McGill University, and the Vice-Chancellor with four members of the Corportion of the University, constitute the Committee of the Normal School for the Session of 1884-85.

ANNOUNCEMENT FOR THE SESSION 1884–85.

This Institution is intended to give a thorough training to teachers, especially for the Protestant population of the Province of Quebec. This end is attained by instruction and training in the Normal School itself, and by practice in the Model Schools; and the arrangements are of such a character as to afford the greatest possible facilities to Students from all parts of the Province.

The twenty-eighth Session of this school will commence on the first of September, 1884. The complete course of study extends over three years, and the Students are graded as follows :—

1. *Elementary School Class*,—Studying for the Elementary School Diploma.
2. *Model School Class*,—Studying for the Model School Diploma.
3. *Academy Class*,—Studying for the Academy Diploma.

The Announcement of the School, containing details as to courses of study, bursaries and other privileges of students, and regulations, may be obtained on application to Dr. Robins, Normal School, Belmont Street, Montreal.

Passed the University Examinations.

SESSION 1883-84,

FACULTY OF LAW.

PASSED FOR THE DEGREE OF B.C.L.

Duclos, C. A., B.A.
Falconer, Alex., B.A.
McLennan, F. S.
Reille, N. T., B.A.
Rogers, J. H., B.A.

Buchan, J. S.
McPherson, K. R., B.A.
McLennan, F., B.A.
Cullen, J.
Cooke, G. F., B.A.
Baril, J.

FACULTY OF MEDICINE.

PASSED FOR THE DEGREE OF M.D., C.M.

(Arranged Alphabetically.)

Addison, Jas. L.
Barrett, Jos. A.
Clarke, Henry J.
Church, John R.
Cook, Sheldon E.
Davies, Thos. B.
Duncan, John A.
Elderkin, Edwin J
Ferguson, W. A., B A.
Gooding, Chas. E.
Graham, Geo. A.
Hutchison, Jas. A.
Johnson, C. H.
Johnston, Wyatt G.
Kelly, Patrick N.
Landor, Thos. H.
McLellan, Jas. H.

McInerney, Jas. P.
McClure, Wm., B.A.
McLean, G. N., B.A.
Meahan, John C.
Merritt, David B., B.A.
Nelson, W. M. F.
O'Brien, Timothy.
Porteous, Wm.
Renner, W. Scott.
Ross, L. D.
Rowell, Geo. B.
Ruttan, Robt. F., B.A.
Smith, E. H.
Smith, W. A. De W.
Smyth, H. E.
Walker, Felix D.
Wilson, Samuel F., M.A.

PASSED THE PRIMARY EXAMINATION.

Armitage, Joseph H.
Birkett, Herbert S.
Cameron, Duncan A.
Corsan, Douglas.
Clark, J. L.
Craig, Murdock A.
Crocket, W. C., B.A.
Doherty, W. W.
Duffett, John L.
Elder, John, B.A.
Gairdner, Thos. M.
Gibson, James B.
Gladman, George J.
Grant, J. H. Y.
Gustin, Smith.
Hughes, P. H.
Kinloch, John A.
McCollum, Ed. P.
McCuaig, Wm. J.
McDonald, H. J.
McGannon, Thos. G.
McMeekin, Jas. W.
McKay, J. M.
Palmer, Guy F.
Platt, Alf. T.
Powne, N. G.
Pringle, W. P.
Raymond, G. H., B.A.
Raymond, Alf.
Robertson, F. D.
Rowat, W. M. L.
Schmidt, A. T.
Seery, F. J.
Smith, W. A.
Turnbull, A. Russell.
White, W. W., B.A.
White, F. J.
Wilson, Chas.
Wishart, D. J., B.A.
Worthington, A. Norreys.

FACULTY OF ARTS.

PASSED FOR THE DEGREE OF B. A.

In Honours.

(Alphabetically arranged.)

First Rank.—CAMERON, KENNETH.
MABON, JAMES.
MACKAY, ADAMS A.
TURNER, WALTER H.
UNSWORTH, JOSEPH K.

Second Rank.-ROGERS, GEORGE.
RONDEAU, SAMUEL.

Ordinary.

(In order of Merit.)

McGill College.

Class I.—MASSE, GODEFROI.
PARENT, MANASSEH B.
HAYTHORNE, THOMAS.
KIRKPATRICK, ROBERT C. } equal.
PEDLEY, JAMES W. }
BLACKADER, EDWARD H.
CHRISTIE, WILLIAM.

Class II.—KENNEDY, ROBERT A. }
MARCEAU, JAMES. } equal.
WRIGHT, GEORGE C. }
GERRIE, ANDREW W.
LARIVIÈRE, DOLARD.

Class III.—None.

PASSED THE INTERMEDIATE EXAMINATION.

McGill College.

Class I.—SWABEY, CHARLES.
TOPP, FRANCIS.
YATES, NELSON P.
RITCHIE, PHILIP E.
SPARLING, WILLIAM.
MACDOUGALL, JOHN. } equal.
MACWILLIAMS, ANDREW. }
LIVINGSTONE, COLIN, H.

Class II.—MCCULLOUGH, OBADIAH.
PATTERSON, WILLIAM.
HIBBARD, FREDERICK W.
MCOUAT, JOHN W.
CLERK, RONZO H.
MCRAE, DUNCAN A.
EVANS, W. HERBERT.
FYLES, WILLIAM A.
DALPÉ, WILLIAM H.

Class III.—PEDLEY, FRANCIS.
WALLACE, WILLIAM E.
MCKERCHAR, COLIN.
CHALMERS, WILLIAM W.
CLEMENTS, BENJAMIN.
HOLDEN, EDGAR D. F.

ADMITTED "AD EUNDEM GRADUM."

SCRIMGER, JOHN M.A., (University of Toronto).

FACULTY OF APPLIED SCIENCE.

PASSED THE EXAMINATION FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

Civil Engineering (*Advanced Course*).

Hedley Vicars Thompson.

Civil Engineering (*Ordinary Course.*)

IN ORDER OF MERIT.

Samuel Fortier, Thomas W. Lesage, Bryce Johnson Saunders.

Mining Engineering.

Charles William Trenholme, Ernest McCourt Macy, Edward Payson Mathewson.

BACHELORS OF APPLIED SCIENCE PROCEEDING TO THE DEGREE OF MASTER OF APPLIED SCIENCE IN COURSE.

Norval Wardrop, B.A.Sc.
Frank Adams, B.A.Sc.

Scholarships and Exhibitions.

SESSION 1883-84.

FACULTY OF ARTS.

I. SCHOLARSHIPS (Tenable for two years).

Year of Commencement.	Name of Scholars.	Subject of Examination.	Annual Value.	Founder or Donor.
1882	Mackay, Adams A.	Mathematics.	$125	W. C. McDonald
1882	Blackader, Edw. H.	Natural Science.	$125	" "
1883	Lochead, Wm.	Mathematics.	$125	" "
1883	Stewart, Wm. G.	Class. & Mod. Lng.	$120	Chas. Alexander.
1883	Hargrave, Isaac L.	Natural Science.	$125	W. C. McDonald

II. EXHIBITIONS (Tenable for one year).

Name of Exhibitioner.	Academic Year.	Annual Value	Founder or Donor.
Patterson, William.	Second	$125	W. C. McDonald, Esq.
MacDougall John.	"	$125	" " "
Ritchie, Philip E.	"	$125	" " "
Topp, Francis.	"	$125	George Hague, Esq.
Johnson, Alex. R.	First	$125	W. C. McDonald, Esq.
Brown, Samuel R.	"	$125	" " "
Johnston, Robert.	"	$125	" " "
Murray, Alfred.	"	$125	" " "
Colby, Charles Wm.	"	$100	Mrs. Jane Redpath.
Hill, Rowland S.	"	$100	Major Hiram Mills.

FACULTY OF APPLIED SCIENCE.

FOURTH YEAR.

(1.) The Exhibition of $50 presented by A. T. Drummond, Esq. Obtained by Cecil Brunswick Smith.

(2.) Mathematical Prize of $25, Cecil Brunswick Smith.

THIRD YEAR.

(1.) The Scott Exhibition of $66, founded by the Montreal Caledonian Society in commemoration of Sir Walter Scott's centenary. Obtained by Hedley Vicars Thompson.

(2.) Mathematical Prize of $25, obtained by Hedley Vicars Thompson.

SECOND YEAR.

(1.) The Exhibition of $100, for Chemistry, presented by J. H. Burland, Esq. Obtained by Arthur Weir.

(2.) The Mathematical Price of $25, obtained by John George E Kerry.

The Prize in books to the value of $25, offered by Leslie Skelton, Esq., to students of the Third and Fourth years for the best Summer Report, has been divided between Cecil Brunswick Smith and Hedley Vicars Thompson, equal.

Prizes, Honours and Standing.

SESSION 1883-4.

FACULTY OF LAW.

GRADUATING CLASS.

FIRST RANK HONOURS AND ELIZABETH TORRANCE GOLD MEDAL.—C. A. DUCLOS

First Rank Honours and Prize, Prize for Thesis.—ALEXANDER FALCONER.

First Rank Honours and Second Prize.—F. S. MACLENNAN.

Second Rank Honours.—F. S. MACLENNAN, N. T. RIELLE.

Standing in the Several Classes.

INTERNATIONAL LAW.—PROFESSOR KERR.

First, DUCLOS (Prize).

Second, BUCHAN.

ROMAN LAW.—PROFESSOR TRENHOLME.

First, FALCONER.

Second, DUCLOS.

CRIMINAL PROCEDURE.—PROFESSOR ARCHIBALD.

First, DUCLOS & FALCONER (equal).

Second, MACLENNAN.

LEGAL HISTORY.—PROFESSOR LAREAU.

First, FALCONER.

Second, DUCLOS.

CIVIL PROCEDURE.—PROFESSOR HUTCHINSON.

First, DUCLOS.

Second, FALCONER.

CIVIL LAW.—PROFESSOR ROBIDOUX.

First,

Second,

COMMERCIAL LAW.—PROFESSOR DAVIDSON.

First, MACLENNAN.

Second, FALCONER.

SECOND YEAR.

PASSED THE SESSIONAL EXAMINATIONS.—STRUTHERS; A W. SMITH, H. J. HAGUE, ; A. G. B. CLAXTON; G. F. O'HALLORAN; R. A. E. GREENSHIELDS; H. J. DUFFETT; —CAMERON; J. G. JOLLY.

Prize for General Proficiency.—STRUTHERS.

First Rank Honours.—STRUTHERS; SMITH; HAGUE.

Second Rank Honours.—CLAXTON; O'HALLORAN; GREENSHIELDS.

Standing in the Several Classes.

INTERNATIONAL LAW.—PROFESSOR KERR.

First, STRUTHERS.

Second, SMITH.

ROMAN LAW.—PROFESSOR TRENHOLME.

First, STRUTHERS.

Second, HAGUE.

CRIMINAL LAW.—PROFESSOR ARCHIBALD.

First, CLAXTON.

Second, SMITH.

LEGAL BIBLIOGRAPHY.—PROPESSOR LAREAU.

First, STRUTHERS.

Second, GREENSHIELDS.

CIVIL PROCEDURE.—PROFESSOR HUTCHINSON.

First, STRUTHERS.

Second, CLAXTON & HAGUE (equal).

CIVIL LAW,—PROFESSOR ROBIDOUX.

First,

Second,

COMMERCIAL LAW.—PROFESSOR DAVIDSON.

First, STRUTHERS.

Second, HAGUE.

FIRST YEAR.

Passed the Sessional Examinations:—BROWN; MURRAY; ELLIOTT; BRYSON; POLLETTE; MACKIE.

First Prize for General Proficiency.—BROWN.

Second Prize for General Proficiency.—MURRAY.

First Rank Honours.—BROWN; MURRAY; ELLIOTT.

Standing in the Several Classes.

ROMAN LAW.—PROFESSOR TRENHOLME,

First, ELLIOTT.

Second, BROWN.

CRIMINAL LAW.—PROFESSOR ARCHIBALD.

First, ELLIOTT.

Second, MURRAY.

LEGAL BIBLIOGRAPHY.—PROFESSOR LAREAU.

First, MURRAY.

Second, BROWN.

CIVIL PROCEDURE.—PROFESSOR HUTCHINSON.

First, BRYSON, & POLLETTE (equal)

Second, BROWN.

CIVIL LAW.—PROFESTOR ROBIDOUX.

First,

Second,

COMMERCIAL LAW.—PROFESSOR DAVIDSON.

First, BROWN.

Second, ELLIOTT.

FACULTY OF MEDICINE.

THE HOLMES GOLD MEDAL.—W. A. FERGUSON, B.A., Richibucto, N.B.

Prize for the best Final Examination.—PATERSON MCINERNEY, Kingston, N.B.

Prize for the best Primary Examination.—SMITH GUSTIN, London, ONT.

THE SUTHERLAND GOLD MEDAL.—JOHN ELDER, Huntingdon, Q.

Students deserving Honourable Mention.

In the Primary Examination, Norman G. Powne, H. S. Birkett, J. A. Kinloch, J. Elder, B.A., D. Corsan, W. W. White, B.A., Wm. J. McCuaig, W. C. Crockett, B.A., G. H. Raymond, B.A., John L. Duffett, C. W. Wilson, F. J. Seery, Geo. B. Rowat, A. Russell Turnbull, E. P. McCollum, and G. F. Palmer.

In the Final Examination, Geo. A. Graham, R. F. Ruttan, Wyatt J. G. Johnson, Edwin J. Elderkin, Thos. B. Davies.

PROFESSOR'S PRIZES.

BOTANY.—Prize, Norman E. Powne, of Nashville, Tenn. For the best collection of Plants—Prize, J. E. Gray, of Coldstream, Ont.

PRACTICAL ANATOMY.—Demonstrator's Prizes, 2nd year, Herbert S. Birkett, of Hamilton, Ont.; 1st year, Donald L. Ross, of Winthrop, Ont.

PATHOLOGY.—Prize awarded to Edwin G. Wood, of Londesboro, Ont., and Honourable Mention to Fred. G. Finley, Montreal, Q.

FACULTY OF ARTS.

GRADUATING CLASS.

B.A. Honours in Mathematics and Natural Philosophy.

MACKAY, ADAMS A.—First Rank Honours and Anne Molson Gold Medal.

B.A. Honours in Natural Science.

CAMERON, KENNETH.—First Rank Honours, and Logan Gold Medal.
ROGERS, GEORGE.—Second Rank Honours.

B.A. Honours in Mental and Moral Philosophy.

MABON, JAMES.—First Rank Honours and Prince of Wales Gold Medal.

B.A. Honours in English Language, Literature and History.

*TURNER WALTER H.—First Rank Honours and Shakespeare Medal Prize.
*UNSWORTH JOSEPH K.—First Rank Honours and Shakespeare Medal Prize.

*Equal in the examination for the Gold Medal

B.A. Honours in Modern Languages and History.

RONDEAU SAMUEL.—Second Rank Honours.

Special Certificates.

MASSE, GODEFROI.—Special Certificate of First Class General Standing.
PARENT, MANASSEH B.—Special Certificate of First Class General Standing.

THIRD YEAR.

McFarlane, James A.—First Rank Honours and Prize in Mental and Moral Philosophy; First Rank General Standing; Prize in Greek, Prize in Hebrew.

Stewart, William G.—First Rank Honours in Natural Science; First Rank General Standing; Prize in Mineralogy.

Lochhead, William.—Second Rank Honours in Mathematics; Second Rank Honours in Natural Science; First Rank General Standing.

Martin, John C.—Second Rank Honours in English.

Colquhoun, A. H. Urquhart.—Second Rank Honours in English.

McLennan, Hugh S.—First Rank General Standing.

On the merits of an examination held in January, 1884, the New Shakspere Society's Prize was awarded to Martin (John C).

The Prize for the best collection of Plants made in the summer of 1883 was awarded to Hargrave, (Isaac L)

PASSED THE SESSIONAL EXAMINATIONS.

Lochhead, McFarlane, Stewart, McLennan (H. S), Budden, Calder, Martin, Thompson, Macvicar; Colquhoun and McLennan (G. A.,) equal; Grant, Higgins, Currie (A.), Currie (W. T.).

SECOND YEAR.

Topp, Francis. —(McGill Normal School.)—First Rank Honours and Prize in Mathematics; First Rank General Standing.

Swabey, Charles.—(St. Peter's School, Charlottetown, P.E.I.)—First Rank General Standing; Prize in Classics; Prize in Logic; Prize in English.

Yates, Nelson P.—(McGill Normal School.)—First Rank General Standing.

Ritchie, Philip E.—(High School, Montreal.)—First Rank General Standing; Prize in French; Prize in German.

Sparling, William.—(Renfrew School.)—First Rank General Standing.—Prize in Hebrew.

Macdougall, John.—(Huntingdon Academy).—Prize in Logic.

Livingstone. Colin.—(Grammar School, St. John, N.B.)—Prize in English; Prize in Botany.

McWilliams, Andrew:—(Private Tuition).—Prize in Hebrew.

PASSED THE SESSIONAL EXAMINATIONS.

Swabey, Topp, Yates, Ritchie, Sparling, Macdougall, McWilliams, Livingstone, McCullough, Patterson, Hibbard, McOuat, Clerk, McRae, Evans, Fyles, Dalpé, Pedley (F.), Wallace, McKerchar, Chalmers, Clements (B.), Holden (E. D. F.).

FIRST YEAR.

BROWN, SAMUEL R.—(Huntingdon Academy).—First Rank Honours and Prize in Mathematics; First Rank General Standing; Prize in Classics; Prize in English.

JOHNSON, ALEXANDER R.—(High School, Montreal).—First Rank Honours and Prize in Mathematics; First Rank General Standing; Prize in Classics.

JOHNSTON, ROBERT.—(Kincardine High School).—First Rank Honours and Prize in Mathematics; First Rank General Standing.

NICHOLSON, JOHN A.—(Prince of Wales College, Charlottetown, P.E.I.)—First Rank General Standing; Prize in Chemistry.

WALSH, JAMES.—(Huntingdon Academy).—First Rank General Standing; Prize in Classics; Prize in French.

NAISMITH, JAMES.—(Almonte High School).—First Rank General Standing; Prize in Hebrew.

PATTON, HUGH M.—(High School, Montreal).—Prize in German.

PASSED THE SESSIONAL EXAMINATIONS.

Brown, Nicholson, Walsh, Johnston (R.), Johnson (A.), Naismith, Colby, Patton, Henderson (R. B.), Whyte (C. W.), Gerrie (J. P.), Hill, McLeod (M. J.), Kingston, McKenzie (Malc.), Nichols, Murray, Holden (R. C.), Solandt; Blackwood and Russell, equal; Wright, Bourne.

At the Examinations in September, 1883, the following *Scholarships* and *Exhibitions* were awarded:

SCHOLARSHIPS—TENABLE FOR TWO YEARS.

THIRD YEAR.—Mathematical Scholarship, *Lochhead (W.).

THIRD YEAR.—Classical and Modern Language Scholarship, ‖Stewart, (W. G.).

THIRD YEAR.—Natural Science Scholarship, *Hargrave (I. L.).

EXHIBITIONS—TENABLE FOR ONE YEAR.

SECOND YEAR.—*Patterson (Wm.), (Huntingdon Academy, Q.); *Macdougall, (John), (Huntingdon Academy); *Ritchie, P. E. (High School, Montreal); †Topp, (Francis), (McGill Normal School.)

FIRST YEAR.—*Johnson (A. R.), (High School, Montreal); *Brown (Samuel R.), (Huntingdon Academy); *Johnston (Robert), (Kincardine High School, Ont.); *Murray (Alfred), (Private Tuition); ‡Colby (C. W.), (Stanstead Wesleyan College); §Hill (Rowland), (High School, Montreal).

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*Value of Scholarship or Exhibition, $125 yearly; founder, W. C. MacDonald, Esq.
†Value, $125 yearly; donor, George Hague, Esq.
‡Value, $100 yearly; founder, Mrs. Jane Redpath.
‖Value, $120 yearly; donor, Charles Alexander, Esq.
§Value, $100 yearly; founder, Major H. Mills.

SESSIONAL EXAMINATIONS, 1884.

ORDINARY COURSE IN ARTS.

GREEK.

B. A. Ordinary.—*Class* I.—Christie and Haythorne and Pedley (Jas. W.), equal; Massé. *Class II.*—Larivière and Marceau and Parent, equal. *Class III.*—Gerrie (A. W).

Third Year.—*Class I.*—McFarlane (*Prize*); Macvicar. *Class II.*—Thompson, McLennan (G. A.); Grant and Watson, equal. *Class III.*—Cameron (D.), Martin, Currie (Alex.), Higgins.

Second Year.—*Class I.*—Swabey (*Prize*);—Fyles, Patterson; Hibbard and Ritchie, equal; Yates. *Class II.*—McOuat and Topp, equal; Clerk and McCullough, equal; Evans and Livingstone and McRae, equal; McWilliams and Sparling, equal; MacDougall. *Class III.*—Bell and O'Sullivan, equal; McKerchar and Pedley (F), equal; Clements and Holden (E. D. F.), equal; Chalmers and Dalpé and Wallace, equal.

First Year.—*Class I.*—Walsh (*Prize*); Brown and Johnson (A. R.) (*Prizes*), equal; Nicholson, Johnston (R.), Colby; Henderson and Patton, equal. *Class II.*—Hill and Naismith, equal; Whyte (C.W.); Murray and Wright, equal; McLeod (M.J.) and Gerrie (J. P.), equal. *Class III.*—Solandt; Holden (R. C.) and Bourne and Kingston, equal; Kemp and McKenzie and Nichols, equal; Blackwood and Russell, equal; Ogilvie and Macaulay, equal; McDonald and Ross, equal.

LATIN.

B. A. Ordinary.—*Class I.*—Mackay; Christie and Haythorne, equal; Kirkpatrick, Parent.—*Class II.*—Kennedy and Wright (G. C.), equal. *Class III.*—None.

Third Year.—*Class I.*—Calder, McLennan, (H. S.). *Class II.* Budden, Grant. *Class III.* Currie (W.T.) and Robertson, equal.

Second Year.—*Class I.*—Swabey (*Prize*); Patterson, McCullough; McKerchar and Sparling, equal; McOuat and Yates, equal;—Evans and Livingstone and Ritchie and Topp, equal; Fyles; Hibbard and Macdougall and McRea, equal; *Class II.*—Chalmers; Clark and O'Sullivan, equal; McWilliams, Pedley (Fr.). *Class III.*—Clements, Dalpé, Bell, Wallace, Holden (E.D.F.), Thomas.

First Year.—*Class I.*—Walsh (*Prize*), Brown (*Prize*), Johnson (A. R., (*Prize*); Colby and Nicholson and Johnston (R.), equal; Henderson and Patton, equal; Naismith, Murray. *Class II.*—Wright,

Hill, McKenzie; Gerrie (Jno. P.) and Kingston and McLeod (P. A.), equal; *Class III.*—Holden (R. C.); Nichols and McLeod (M. J) and Whyte (C. W.), equal; Russell; Bourne and Kemp and Ogilvie, equal; Solandt; McLennan (Alex.) and Skrine, equal; Clark and McDonald and Blackwood, equal.

GREEK AND ROMAN HISTORY.

FIRST YEAR.—*Class I.*—Brown and Colby and Johnson (A. R.) and Nicholson, equal; Gerrie (J. P.) and Johnston (Robt.) and Patton, equal; Henderson, Walsh, Kingston; Solandt and Wright, equal; Nichols. *Class II.*—McLeod (M. J.); Blackwood and McKenzie (Malc.) and Murray, equal; Hill and Whyte (C. W.), equal; Naismith. *Class III.*—Bourne and Holden (R. C.) and Kemp and Ogilvie, equal; Macaulay and McTaggart and Russell and McCusker, equal; Clark and Ross and Sweeny and Thurlow, equal.

MENTAL AND MORAL PHILOSOPHY.

B.A. ORDINARY.—(*Moral Philosophy*).—*Class I.*—Turner, Pedley (J. W.), Wright, Parent, Mabon; Gerrie (A. W.) and Massé, equal; Blackader and Rondeau, equal; *Class II.*—Marceau and Somerville, equal; Larivière. *Class III.*—Cook.

B. A.—(Additional Department *in Mental and Moral Philosophy*)—*Class I.*—Pedley (J. W.), Gerrie (A. W.)

THIRD YEAR.—(*Additional Department in Mental Philosophy*).—*Class I.*—Macvicar, McFarlane, Thompson. *Class II.*—Currie Alex.) Higgins.

Prize.—McFarlane.

SECOND YEAR.—(*Logic.*)—*Class I.*—Swabey, McDougall, Ritchie, Sparling, Livingstone; Topp and Yates, equal; Patterson. *Class II.*—Evans and McWilliams, equal; Clerk; Hibbard and McCullough, equal; Chalmers; Dalpé and Pedley (Francis, equal; McOuat. *Class III.*—Fyles, McKerchar, Bell, Dewar, Baldwin, Wallace Davies and McRae, equal; Internoscia.

Joint Prize.—Macdougall and Swabey.

HONOURS IN MENTAL AND MORAL PHILOSOPHY.

B.A.—*First Rank.*—Mabon (Prince of Wales Gold Medal).
THIRD YEAR—*First Rank.*—McFarlane.

RHETORIC AND ENGLISH LITERATURE.

THIRD YEAR.—*Class I.*—Martin, Colquhoun. *Class II.*—McFarlane, McLennan, Watson. *Class III.*—Macvicar, Thompson, Currie (A.).

MODERN HISTORY.

B. A. ORDINARY.—*Class I.*—Turner, Kennedy, Christie. *Class II.*—Unsworth; Pedley and Haythorne, equal. *Class III.*—Gerrie, Blackader.

ENGLISH LITERATURE AND HISTORY.

SECOND YEAR.—*Class I.*—Livingstone and Swabey, equal (*Prizes*); Topp, Dalpé, Clerk, McOuat. *Class II.*—Macdougall, Hibbard, McRae; McKerchar and Ritchie, equal; McCullough, Evans, Chalmers, McWilliams, Fyles. *Class III.*—Yates, Bell; Clements and Patterson and Holden, equal; Pedley, Wallace; O'Sullivan and Sparling, equal; Dewar, Thomas, Internoscia.

FIRST YEAR.—*Class I.*—Brown (*Prize*), Nicholson; Johnston (R.) and Naismith, equal; Colby, Henderson, Walsh, McLeod (P. A.) *Class II.*—Whyte; Patton and Gerrie, equal; Nichols and Hill, equal; Davies, Holden, Blackwood, Wright, Johnson, (A. R.), Murray, *Class III.*—Bourne, McLeod (M. J.), McKenzie (Malc.), Solandt, Ogilvie, Kingston, Kemp, Russell, Clark, Ross, Dolloff, McCusker.

FRENCH.

B. A. ORDINARY.—(*Additional Course*).—*Class I.*—Rondeau. *Class II.*—Larivière. *Class III.*—None.

FOURTH YEAR.—*Class I.*—Rondeau, Parent, Massé, Marceau, Larivière. *Class II.*—Blackader, Kirkpatrick, Christie. *Class III.*—Wright.

THIRD YEAR.—*Class I.*—Pinel, McLennan (H. S.). *Class II.*—Thompson, Colquhoun. *Class III.*—Calder.

SECOND YEAR.—*Class I.*—Thomas, Ritchie (*Prize*), Clements; Macdougall and Swabey, equal; Topp, Dalpé. *Class II.*—McOuat; Fyles and Yates, equal; Clerk, Patterson, Livingstone, Hibbard, Pedley. *Class III.*—Chalmers, Evans; Bell and O'Sullivan, equal; Holden, McKerchar.

FIRST YEAR.—*Class I.*—Walsh (*Prize*); Brown, Nicholson. *Class II.*—Johnston, Patton; Hill and Johnson, equal; Solandt, Murray Holden, Henderson. *Class III.*—Colby and Russel, equal; Nichols; Kingston and Wright, equal; Kemp, Blackwood.

GERMAN.

SECOND YEAR.—*First Division.—Class I.*—Ritchie (*Prize*); Thomas. *Second Division.—Class I.*—McCullough.

FIRST YEAR.—*Class I.*—Cantlie, Patton (*Prize*), Johnson (Alex.). *Class II.*—Kingston. *Class III.*—McKenzie, (Malc.).

HEBREW.

FIRST YEAR.—*Class I.*—Naismith and McWilliams, equal (*Prizes*); McRae *Class II.*—McLeod (M. J.), Gerrie; Cook and Whyte (C. W.), equal. *Class III.*—Johnston (R.), Ross.

SECOND YEAR.—*Class I.*— Sparling (*Prize,*) Wallace. *Class II.*—Dewar. *Class III.*—None.

THIRD YEAR.—*Class I.*—McFarlane, (*Prize*), Grant. *Class II.*—Higgins. *Class III.*—Currie (A).

THE NEIL STEWART PRIZE.——Graham (J. H.), B.A.

ASTRONOMY AND OPTICS.

B. A. ORDINARY.—*Class I.*—Mackay, Blackader, Massé, Kirkpatrick, Wright. *Class II.*—Marceau. *Class III.*—Kennedy.

THIRD YEAR.—*Class I.*—Lochhead, Calder.

MATHEMATICAL PHYSICS.

B. A. ORDINARY.—*Class I.*—Mackay, Massé, Haythorne; Blackader and Parent, equal; Christie and Kirkpatrick, equal. *Class II.*—Kennedy, Marceau, Rogers, Wright. *Class III.*—None.

THIRD YEAR.—*Class I.*—Lochhead, McLennan (H. S.), McFarlane, Budden. *Class II.*—Stewart (W. G.), Calder. *Class III.*—Macvicar, McLennan (G. A.), Robertson; Colquhoun and Currie (W. T.), equal; Cameron (D.).

TRIGONOMETRY AND ALGEBRA.

SECOND YEAR.—*Class I.*—Yates, Topp, Wallace; Hibbard and McWilliams, equal; Sparling. *Class II.*—McRae, Dewar, Ritchie, Patterson. *Class III.*—Livingstone, McCullough, Pedley, Dalpé, Clements, Macdougall, Swabey; McKerchar and McOuat, equal; Clerk, Evans, Holden (E. D. F.), Fyles.

FIRST YEAR.—*Class I.*—Johnson (A.), Brown, Johnston (R.). *Class II.*—Whyte (C.), Nicholson, Hill, Walsh; McLeod (M. J.) and Naismith, equal. *Class III.*—Gerrie, Patton, Kingston, Bourne, Nichols, Holden (R. C.) Henderson (R. B.), Dolloff; Solandt and, McCusker, equal; McLean; McKenzie and Murray, equal; Ross, Russell, Colby and McLeod (P. A.) equal; Blackwood.

GEOMETRY AND ARITHMETIC.

SECOND YEAR.—*Class I.*—Patterson; Macdougall and Ritchie, equal; Yates, McWilliams, Sparling, McCullough, Topp, McOuat. *Class II.*—Clerk (R. H.) and Hibbard, equal; McRae, Evans, Swabey, Holden (E. D. F.), Chalmers, Wallace, McKerchar, Dewar, Livingstone, Thomas. *Class III.*—Pedley, Dalpé, Thomas, Clements, O'Sullivan, Fyles, Internoscia.

FIRST YEAR.—*Class I.*—Johnston (R.), Walsh, Nicholson, Brown, Johnson (A.); Hill and Naismith, equal; Patton, Whyte (C.) *Class II.*—Colby, Henderson (R. B.), McKenzie (Malc), Kingston, Nichols McLeod (P. A.); Gerrie and McLeod (M. J.) equal; *Class III.*—McCusker, Russell; Dolloff and Wright, equal; Blackwood and Bourne, equal; Holden (R. C), Murray, McLean (J. A.), Solandt, McLennan (A.); Sweeny and McDonald and Thurlow, equal; Beaudry.

EXPERIMENTAL PHYSICS.

B. A. ORDINARY.—*Class I.*—Haythorne and Kirkpatrick and Mackay, equal; Massé, Rogers. *Class II.*—Mabon, Cameron (K.), Kennedy, Wright; Marceau and Parent, equal; Blackader. *Class III.*—None.

THIRD YEAR.—*Class I.*—Stewart (W. G.), Lochhead, McLennan (H. S.), Budden. *Class II.*—Gardner (A. W.), (*occl.*). *Class III.*—Robertson; Cameron (D.) and Grant and Macvicar, equal; Currie (W. T.)

HONOUR EXAMINATIONS IN MATHEMATICS AND NATURAL PHILOSOPHY.

B. A.—*First Rank Honours and Anne Molson Gold Medal.*—Mackay, (Adams A.).

THIRD YEAR.—*Second Rank Honours.*—Lochhead.

SECOND YEAR.—*First Rank Honours and Prize.*—Topp (F.).

FIRST YEAR.—*First Rank Honours and Prizes.*—Brown, Johnson (A. R.), Johnston (R.).

NATURAL SCIENCES AND CHEMISTRY.

B. A. ORDINARY.—(*Geology and Lithology.*)—*Class I.*—Cameron, Rogers. *Class II.*—Blackader, Pedley; Gerrie and Unsworth, equal. *Class III.*—Larivière.

THIRD YEAR.—(*Mineralogy*).—*Class I.*—Stewart (*Prize*); Budden and Calder, equal; Martin. *Class II.*—None. *Class III.*—Watson, Higgins, Roberts, Currie, (W. T.), Grant.

THIRD YEAR.—(*Additional Department, Chemistry and Palæontology*).—*Class I.*—Stewart, Budden. *Class II.*—McLennan (H. S.) *Class III.*—Robertson.

Standing in seperate branches of the additional department, Third Year.

THEORETICAL CHEMISTRY.—*Class I.*—Stewart, McLennan, Budden. *Class II.*—Lochhead. *Class III.*—Robertson.

PRACTICAL CHEMISTRY. (*Paper.*)—*Class I.*—Stewart. *Class II.*—Budden. *Class III.*—Lochhead, McLennan, Robertson.

PRACTICAL CHEMISTRY.—*Class I.*—None. *Class II.*—Stewart, Budden, Lochhead. *Class III.*—Robertson, McLennan.

PALÆONTOLOGY.—*Class I.*—Budden, Stewart, McLennan. *Class II.*—None. *Class III.*—Robertson.

SECOND YEAR.—(*Botany.*)—*Class I.*—Livingstone (*Prize*), Bell; McWilliams, MacDougall, Swabey, Sparling, Clerk; Yates and McRae, equal. *Class II.*—Pedley, (F.), McOuat, Fyles and Dalpé, equal; Topp, Evans, Ritchie, McCullough; Hibbard; Thomas and Dewar, equal; McKercher, Chalmers.—*Class III.*—Wallace, Internoscia, Holden, Patterson; O'Sullivan and Clements, equal.

FIRST YEAR.—(*Chemistry*).—*Class I.*—Nicholson (*Prize*); McLeod (P. A.) and Gerrie (J. P.), equal; Johnston (R.) and McKenzie (Malcolm), equal; Walsh, Naismith, Brown. *Class II.*—McLeod (M. J.), Colby, Whyte, Henderson, Nichols, Bourne, Kingston, Patton. *Class III.*—McCusker, Murray, Russell, Solandt, Blackwood, Hill, Ross, Dolloff, McLean, Johnson (A. R.), Holden (R. C.), Sweezy, McKenzie (Murdoch), McDonald, McIlraith, Thurlow.

METEOROLOGY.

Class I.—Blackader, Kirkpatrick. *Class II.*—None.

SUPPLEMENTAL EXAMINATIONS, 1883-84.

PASSED.

I.—September, 1883.

(*a*)—Supplemental Sessional Examinations.

SECOND YEAR.—Cameron, (D.), Watson,

FIRST YEAR.—Evans, W. H.

(*b*)—Supplemental in one Subject.

SECOND YEAR.—Budden, Currie, W. T., Grant, Higgins, Roberts.

FIRST YEAR.—Clements, Craig, Dalpe, O'Sullivan.

II.—February, 1884.

(Supplemental to Christmas Examinations.)

(*a*)—Supplemental in two or more subjects.

THIRD YEAR.—Lochhead, Martin.

SECOND YEAR.—McCullough, O'Sullivan, Thomas.

FIRST YEAR.—Dolloff.

(*b*)—Supplemental in one Subject.

THIRD YEAR.—Cameron, (D.), Thompson.

SECOND YEAR.—Bell, Clements, Pedley, Ritchie.

FIRST YEAR.—Kingston, Nichols, Ogilvie, Macauly.

FACULTY OF APPLIED SCIENCE.

GRADUATING CLASS.

Cecil Brunswick Smith—Lansdowne Medal; $50 exhibition; Leslie Skelton Prize; $25 Mathematical Prize; Prizes in Materials, Applied Mechanics, Designing, Railway-Work, Hydraulics, the Theory of Heat and the Steam-Engine.

William Graham.—Prize in Machinery and Millwork.

Edward Henry Hamilton.—Second Rank Honours in Natural Science.

PASSED THE SESSIONAL EXAMINATIONS.

Civil Engineering (*Advanced Course*).

IN ORDER OF MERIT.

Cecil Brunswick Smith, David Ogilvy.

Civil Engineering (*Ordinary Course*).

John McDonald, John M. McKenzie, James William Moffatt, David Edward McMillan, Allan R. Davis, John L. Hislop, Gordon Forlong.

Mechanical Engineering.

William Graham.

Mining Engineering.

Joseph Alfred Robert.

Practical Chemistry.

Edward Henry Hamilton.

THIRD YEAR.

Hedley Vicars Thompson.—The Scott exhibition; Leslie Skelton Prize; Mathematical Prize of $25; Prize in Applied Mechanics.

Charles William Trenholme—Prizes in Chemistry and Assaying.

Ernest McCourt Macy—Prizes in Mining and Geology.

Edward Payson Mathewson—Prize in Mineralogy.

SECOND YEAR.

John George Gale Kerry—Mathematical Prize of $25; Prizes in Mathematics and Mathematical Physics, Experimental Physics, Mechanism, Materials and Mineralogy.

Nevil Norton Evans—Prizes in French, Descriptive Geometry, Practical Chemistry, Botany.

Arthur Weir—The Burland Exhibition of $100; Prize in Chemistry.

PASSED THE SESSIONAL EXAMINATIONS.

Civil Engineering.

IN ORDER OF MERIT.

John G. G. Kerry, Allan Wilmot Strong, Alexander Forrester Stewart, Frederick William Cowie, Harmon Trueman, George Herbert Dawson, Thomas Watson.

Mechanical Engineering.

William Murray Reid.

Mining Engineering.

Charles Percy Brown.

Practical Chemistry.

Nevil Norton Evans, Arthur Weir.

FIRST YEAR.

William Arthur Carlyle—Prizes in Chemistry and German.

Robert E. Palmer—Prize in Mathematics.

PASSED THE SESSIONAL EXAMINATIONS.

IN ORDER OF MERIT.

William Arthur Carlyle, Robert E. Palmer, Victor F. W. Forneret, Robert Moffatt, John Ernest May, Henry Yale Spencer, Charles Lauglin Walters, Lawrence Anable Darey.

STANDING IN SPECIAL SUBJECTS.

ESSAYS PREPARED DURING THE SUMMER OF 1883.

FOURTH YEAR.—*Class I.*—Smith, C. B. (*The Hamilton Water-Works*); McKenzie (*Residences Nos. 2 and 3 of the A. & E. S. L. Railway*), McDonald (*Water-Supply*) and Moffatt (*Roads and Streets*) and Ogilvy (*Railway-Work*), equal; Hislop (*The Water-Works at Paris, N.B.*), Graham (*Elevator Dredges*). *Class II.*—McMillan (*Canadian Railway Construction*), Robert (*The Atlantic Coast Series of N.S.*); Davis (*The Murray Canal*) and Forlong (*Dynamite Works*), equal; Hamilton (*Notes on Ste. Anne River and the Shicksocks*). *Class III.*—McTaggart (*Locomotive Erection*).

THIRD YEAR.—*Class I.*—Thompson (*N. S. Division of A. & E. S. L. Railway*), Fortier (*Location of the Extension of the W. & M Railway*). *Class II.*—Macy (*The Capelton Copper and Sulphur Mines*) and Trenholme (*The Acadian Iron Mines*), equal Mathewson (*The Emerald Phosphate Mine*), Saunders (*Survey of Township No. 56, 21st Range W. of No. 4 Meridian*), Lesage (*Retaining Walls*). *Class III.*—Routhier (*Hydraulic Railway, Paris.*)

SECOND YEAR.—*Class I.*—Ferrier (*The Zinc Mines of Mine Hill, N.J.*), Brown, C. P. (*Salt and the Michigan Salt Wells*) and Evans (*Duryee's Petroleum Furnace*) and Watson (*The Greece's Point Public Works*) and Weir (*The Block-house Mine, Cape Breton*), equal. *Class II.*—Dawson (*The Riverside Worsted Factory*) and Perkins (*The System of Subdivision Survey in the North-West*), equal. *Class III.*—Reid (*Drills and Drilling Machines*), Burns (*The Lathe*).

DESCRIPTIVE GEOMETRY.

THIRD YEAR.—(*Civil Engineering Course*).—*Class I.*—None. *Class II.*—Thompson. *Class III.*—Fortier, Lesage, Pitcher.

THIRD YEAR.—(*Mining Engineering Course*).—*Class I.*—None. *Class II.*—Trenholme. *Class III.*—Macy.

SECOND YEAR.—*Class I.*—Evans (*Prize*), Strong. *Class II.*—Cowie and Kerry, equal; Brown, Weir, Watson, Stewart, Dawson. *Class III.*—Burns, Palmer, (1st year); Trueman and Reed, equal; Hutchison, Taylor.

FREEHAND DRAWING.

FIRST YEAR.—*Class I.*—Carmichael. *Class II.*—Forneret, Henderson; May and Carlyle, equal. *Class III.*—Spencer, Amyrauld, Darey, Palmer, Ball, Moffat, Walters.

MECHANISM.

SECOND YEAR.—*Class I.*—Kerry (*Prize*). *Class II.*—Strong, Brown; Stewart and Reed, equal. *Class III.*—Cowie, Trueman; Dawson and Watson, equal.

SURVEYING.

THIRD YEAR.—*Class I.*—Fortier. *Class II.*—Thompson, Saunders. *Class III.*—Lesage.

SECOND YEAR.—*Class I.*—Kerry and Strong, equal. *Class II.*—Cowie, Brown, Stewart. *Class III.*—Watson, Trueman, Dawson.

MACHINERY AND MILLWORK.

FOURTH YEAR.—*Class I.*—Graham. *Class II.*—McTaggart.

MECHANICAL WORK.

FOURTH YEAR.—*Class I.*—Graham. *Class II.*—McTaggart.

SECOND YEAR.—*Class I.*—Reid. *Class II.*—None. *Class III.*—Burns.

MATERIALS.

FOURTH YEAR.—*Class I.*—Smith C. B. (*Prize*); McDonald and Ogilvy, equal; McKenzie, Graham, Moffatt. *Class II.*—McTaggart, Davis, Forlong, McMillan, Robert. *Class III.*—Hislop.

THIRD YEAR.—*Class I.*—Mathewson; Trenholme; Macy and Thompson, equal; Fortier. *Class II.*—Lesage, Saunders. *Class III.*—Mignault, Routhier, McCarthy, Pitcher.

SECOND YEAR.—*Class I.*—Kerry (*Prize*); Cowie, Watson. *Class II.*—Dawson, Trueman, Stewart; Perkins (occ.) and Strong, equal; Burns, Reid. *Class III.*—Taylor.

APPLIED MECHANICS. (*Course of Civil Engineering.*)

FOURTH YEAR.—*Advanced Course.*—Smith (C.B.), Ogilvy.
Ordinary Course.—Class I.—Smith C.B., (*Prize*) Ogilvy, McDonald. *Class II.*—McKenzie, Moffatt (J.), McMillan. *Class III.*—Davis, Hislop, Forlong.

THIRD YEAR.—*Advanced Course.*—Thompson.
Ordinary Course.—Class I.—Thompson (*Prize*). *Class II.*—Trenholme, Fortier. *Class III.*—Macy, Mathewson, Saunders, Lesage.

APPLIED MECHANICS. (*Course of Mechanical Engineering.*)

FOURTH YEAR.—*Class I.*—None. *Class II.*—Graham.

RAILWAY WORK.

FOURTH YEAR.—*Class I.*—Smith C.B. (*Prize*), Ogilvy, McKenzie, McDonald, Moffatt (J). *Class II.*—McMillan, Davis. *Class III.*—Forlong, Hislop.

THIRD YEAR,—*Class I.*—Fortier and Thompson, equal. *Class II.*—Lesage, Saunders. *Class III.*—Routhier, Perkins (occ.)

DESIGNING.

FOURTH YEAR.—*Class I.*—Smith, C. B., (*Prize*), Ogilvy; Moffatt (J.) and McKenzie, equal; McDonald. *Class II.*—Forlong and McMillan, equal; Hislop. *Class III.*—Davis, Robert.

HYDRAULICS.

FOURTH YEAR.—*Class I.*—Smith C.B. (*Prize*), Ogilvy. *Class II.*—McDonald, Graham. *Class III.*—Davis, McMillan; Hislop and Robert, equal; Moffatt (J.), Forlong.

THEORY OF HEAT AND THE STEAM-ENGINE.

FOURTH YEAR.—*Class I.*—Smith C. B. (*Prize*), Ogilvy, Graham. *Class II.*—McDonald, McKenzie. *Class III.*—McMillan, Davis; McTaggart and Robert, equal; Moffatt (J.), Hislop, Forlong.

CHEMISTRY.

FOURTH YEAR.—(*Chemistry Course*).—*Class I.*—Hamilton.
SECOND YEAR.—(*Chemistry Course*).—*Class I.*—Evans (*Prize*), Weir.
(*Mining Course.—Class I.*—None. *Class II.*—Brown.

FIRST YEAR.—*Class I.*—Carlyle, Forneret, Palmer, Moffatt, Strong. *Class II.*—Ball, Walters, Darey, Carmichael, Spencer. *Class III.*—Henderson.

N.B.—Amyrauld being prevented by illness from being present at the ordinary examination in this subject passed a special examination and was placed in the second class.

ASSAYING.

FOURTH YEAR.—*Class I.*—None. *Class II.*—Robert.

PRACTICAL CHEMISTRY AND ASSAYING.

THIRD YEAR.—*Class I.*—Trenholme (*Prize*). *Class II.*—Macy, Mignault, Mathewson.

METALLURGY.

FOURTH YEAR.—*Class I.*—(None). *Class II.*—Hamilton, Robert.

MINING.

THIRD YEAR.—*Class I.*—Macy (*Prize*), Mathewson, Trenholme. *Class III.*—Mignault, Roy.

GEOLOGY (*Advanced*).

FOURTH YEAR.—*Class I.*—(None). *Class II.*—Hamilton. *Class III.*—Robert.

GEOLOGY, ORDINARY.

THIRD YEAR.—*Class I.*—Macy (*Prize*), Mathewson. *Class II.*—Hamilton, Fortier, Thompson, Lesage. *Class III.*—Mignault, Saunders, Roy, Ritchie, Routhier, McCarthy.

MINERALOGY AND BLOWPIPE ANALYSIS.

THIRD YEAR.—*Class I.*—Mathewson, Macy.

SECOND YEAR.—*Class I.*—Kerry, Trueman, Watson, Stewart, A. *Class II.*—Brown, Dawson Strong. *Class III.*—Taylor, Craven, Cowie, Costigan.

BOTANY.

SECOND YEAR.—*Class I.*—Evans, Weir.

ESSAY.

FOURTH YEAR.—(*The gauging of rivers and streams.*)—*Class I.*—Ogilvy and Smith (C. B.), equal; McDonald and McKenzie equal; *Class II.*—McMillan; Hislop and Moffat, equal; Forlong. *Class III.*—Davis.

(*The transmission of power by wire-ropes.*)—*Class I.*—Graham. *Class II.*—McTaggart.

(*The Siemens-Martin Process for manufacture of steel.*)—*Class I.*—Robert.

(*Manufacture of Wrought-iron direct from the ore.*)—*Class I.*—None. *Class II.*—Hamilton.

THIRD YEAR.—(*Trusses for roofs and bridges of small span*).—*Class I.*—Fortier and Thompson, equal; Saunders. *Class II.*—Lesage. *Class III.*—McCarthy and Pitcher, equal; Routhier.

(*Colliery actions and their preventions*).—*Class I.*—Trenholme and Macy, equal; *Class II.*—Mathewson, *Class III.*—Mignault.

SECOND YEAR.—(*Permanent way of Railroad.*)—*Class I.*—Watson, Stewart; Cowie and Kerry and Wieman, equal; Dawson and Strong, equal. *Class I.*—Perkins. *Class II.*—Taylor.

(*Rivetting.*)—*Class I.*—None. *Class II.*—Reid, Burns.

(*Combustion.*)—*Class I.*—Weir, Evans.

The Economic Minerals of Canada.)—*Class I.*—None. *Class II.*—Brown, Craven.

EXPERIMENTAL PHYSICS.

THIRD YEAR.—*Class I.*—Macy, Thompson, Mathewson. *Class II.*—None. *Class III.*—Pitcher, Fortier, Lesage, McCarthy and Mignault, equal.

SECOND YEAR.—*Class I.*—Kerry, Weir, Stewart, Evans, Strong. *Class II.* Trueman. *Class III.*—Brown and Reid, equal; Taylor, Cowie; Dawson and Watson, equal.

MATHEMATICS.

FOURTH YEAR.—*Class I.*—Ogilvy and Smith, equal. *Class II.*—McDonald and Moffat, equal. *Class III.*—Hislop, McKenzie, McTaggart, Graham, McMillan, Robert, Davis, Furlong.

THIRD YEAR (*Advanced*).—*Class I.*—Thompson.

THIRD YEAR (*Ordinary*).—*Class I.*—Thompson. *Class II.*—Fortier and Saunders, equal. *Class III.*—Routhier, Pitcher, Lesage, McCarthy.

SECOND YEAR.—*Class I*—Kerry, Strong. *Class II.*—Stewart, Reid, Trueman. *Class III.*—Brown, Cowie, Dawson.

FIRST YEAR.—*Class I.*—Palmer, Carlyle. *Class II.*—None. *Class III.*—Forneret, May, Moffat (R).

MATHEMATICAL PHYSICS.

THIRD YEAR.—*Class I.*—Macy and Thompson, equal; Fortier, Mathewson, Trenholme. *Class II.*—None. *Class III.*——Lesage, Routhier, Mignault, Saunders.

SECOND YEAR.—*Class I.*—Kerry, Evans. *Class II.*—Stewart, Strong; Cowie and Weir, equal; Watson, Trueman; Brown and Dawson, equal. *Class III.*—Reid.

ENGLISH COMPOSITION.

THIRD YEAR.—*Class I.*—Macy, Lesage, Fortier, Mignault. *Class II.*—Mathewson. *Class III.*—Pitcher; McCarthy and Roy, equal; Routhier.

SECOND YEAR.—*Class I.*—Weir, Kerry, Stewart, Evans, Trueman, Brown. *Class II.*—Strong and Watson, equal; Reid, Cowie, Burns. *Class III.*—Dawson, Taylor, Perkins, Craven.

ENGLISH LANGUAGE AND LITERATURE.

FIRST YEAR.—*Class I.*—None. *Class II.*—Carlyle, Moffatt, (R.), Palmer. *Class III.*—Carmichael, Spencer, Walters, Ball, Forneret, Amyrauld, Darey, Henderson (T.)

FRENCH.

SECOND YEAR.—*Class I.*—Evans (*Prize*). *Class II.*—Kerry, Brown. *Class III.*—Dawson, Trueman, Watson, Strong.

FIRST YEAR.—*Class I.*—None. *Class II.*—Darey, Palmer, Walters. *Class III.*—Forneret, Henderson (T.)

GERMAN.

THIRD YEAR.—*Class III.*—Saunders.

SECOND YEAR.—1st Division.—*Class I.*—Weir. *Class II.*—None. *Class III.*—Moffatt (R.)
2nd Division.—*Class I.*—Stewart. *Class II.*—None. *Class III.*—Cowie.

FIRST YEAR.—*Class I.*—Carlyle (*Prize*). *Class II.*—Spencer. *Class III.*—May.

METEOROLOGY.

Class I.—None. *Class II.*—Hamilton.

DR. WICKSTEED'S MEDALS FOR PHYSICAL CULTURE.

(*The gift of Richard M. Wicksteed, LL.D.*)

Graduating Class.

Gold Medal.—Mackay, A. A.
Honourable Mention.—Gerrie, A. W.

Junior Class.

Silver Medal.—Macy, E. McC.
Bronze Medal.—Swabey, C.
Honourable Mention.—Bell, John H.
" Ritchie,

Graduates of the University.

DOCTORS OF DIVINITY.

*Bethune, Rev. John [ad eundem]. 1843
*Falloon, Rev. Daniel [Hon]..... 1844

DOCTORS OF LAWS AND OF CIVIL LAW.

*Abbott, Christopher, B.C.L. [D.C.L. in course].....1862
Abbott, Hon. J. J. C., B.C.L. [D.C.L. in course].....1867
*Adamson, Rev. Wm. A. [D.C.L. hon].....1851
Badgley, Hon. Wm. [D C.L. hon]...1843
*Bancroft, Rev. C., D.D. [LL D. hon] 1870
Blackwood, Right Hon. Frederick Temple Hamilton, Earl of Dufferin [LL.D. hon].....1878
Bond, Rev. Wm., M.A. [LL.D. hon].1870
Butler, Thomas P., B.C.L. [D.C.L. in course].....1881
Campbell, Right Hon. Sir John Douglas Sutherland, Marquis of Lorne, [LL.D. hon] 1883
*Campbell, George W., M.A., M.D. LL.D. hon] 1875
Chamberlin, B., M.A., B.C.L. D.C.L. in course]. 1867
Chauveau, Hon. Pierre J. O. LL.D. hon)..... 1857
Cordner, Rev. John (LL.D. hon.)....1870
Cornish, Rev. George, M.A. LL.D. in course).....1872
*Cushing, Lemuel, M.A. (LL.D. in course).....1879
Davidson, Charles Peers, M.A., B.C.L. (D.C.L. in course).....1875
*Davies, Rev. Benjamin, Ph.D. (LL.D. hon) .... .1856
Dawson, John William, M.A. (LL.D. hon) LL.D. Edin.....1857
*DeSola, Rev. A. (LL.D. hon).....1858
Douglass, Rev. Geo. (LL.D. hon)....1870
*Doutre, Gonzalve, B.C.L. (D.C.L. in course)..... 1873
Duff, Rev. Archibald, M.A. (LL.D. in course) 1881
*Falloon, Rev. D., D.D. (LL.D. hon) 1862
Frechette, Louis H. (LL.D. hon).....1881
Gautier Zephirin, B.C.L. (D.C.L. in course) 1883
Gilman, Francis E., M.A., B.C.L. (LL.D. in course).....1877
Girouard, Désiré, B.C.L. (D.C.L. in course).....1874
*Head, Right Hon. Sir Edmund W., Baronet, M.A. (LL.D hon)....1862
Hemming, Edward J., B.C.L. (D.C.L. in course).....1871
*Holmes, Andrew F., M.D. (LL.D. hon).....1858
Howe, Henry Aspinwall, M.A. (LL.D hon)..... 1870
Hunt, T. Sterry, M.A. (LL.D. hon)..1865
Jenkins, Rev. John (D.D. Univ. N.Y.) (LL.D. hon 1879
Kerr, William H. (D.C.L. in course).....1873
Kirby, James, M.A., B.C.L. (D.C.L. in course) (LL.D. in course).....1874
Laflamme, Hon. R. G., B.C.L. (D.C.L. in course).....1873
Lawson, G., Ph.D. (LL.D. hon) 1862
*Lafrenaye, P. R, B.C.L. (D.C.L. in course) 1873
Leach, Rev. Wm. T., M.A. (D.C.L. hon)..... 1849
(LL.D. hon) 1857
*Logan, Sir William E., Kt. (LL.D. hon).....1856
*Lundy, Rev. Francis (D.C.L. hon) 1843
Lyall, Rev. W. (LL.D. hon) 1864
McGregor James, M.A. (LL.D. in course).....1880
MacVicar, Rev. D. H. (LL.D. hon)...1870
Meredith, Edmund A., B.C.L. (LL.D. hon).....1857
Miles, Hy. H., M.A. (LL.D. hon).....1866
Morris, Hon. Alexander, M.A., B.C.L. (D.C.L. in course).....1862
Morrison, Rev. Jas. D., M.A (D.D. Union College N.Y.) (LL.D. in course).....1880
Parkman, Francis (M.A. Harvard) (LL.D. hon).....1879
Robins, Sampson Paul, M.A. (LL D. in course).....1880
Rollitt, Albert K.) LL.D. London Uni.,) (LL.D. ad eun).....1871
Roy, Rev. James, M.A., (ad eun) (LL.D. in course).....1883
Selwyn Alfred R. C., F.R.S. (LL.D. hon) 1881
*Smallwood, Charles, M.D. (LL.D. hon) 1856
*Smith, William Stuart (LL.D. hon).1858
*Vallieres de St. Real, Hon. J. R. (D.C.L. hon).....1844
Wickes, Rev. Henry (LL.D. hon).....1868
Wicksteed, Richard M., M.A. (LL.D. in course).....1879
Wilkes, Rev. Henry, M.A., D.D. (LL.D. hon).....1870
Wurtele, Hon. J.S.C., B.C.L. (D.C.L. in course).....1882

*Deceased.

DOCTORS IN MEDICINE.

Addison, Jas. L., West Flamboro, O 1884
*Adsetts, John, 1866
Alexander, Robert A., Grimsby, O 1871
Alguire, Duncan O., Cornwall, O 1873
Allard, Emery, Belœil, Q 1866
†Allan, Hamilton, Oconto, Wis 1872
Allen, C. E., East Farnham, Q 1883
Alloway, Thomas Johnson, Montreal 1869
Anderson, Alex., Med. Dept. Indian Army 1866
*Anderson, John C., 1865
Archer, Ths., Wandsworth, Eng 1869
Ardagh, Johnson, Orillia, O 1869
Armstrong, Geo. E., Montreal 1877
*Arnoldi, Daniel [Hon], 1847
Atkinson, Robert, 1862
Ault, Alexander, Ochkosh, Wis 1860
Ault, Charles, Montreal 1855
*Ault, James F., 1855
Ault, Edwin D., Aultsville, O 1868
Austin, Fred. John, Sherbrooke, Q 1862
Ayer, N., M.A., Sackville, N B 1850
Aylen, John, Aylmer, Q 1857
Aylen, James, Aylmer, Q 1863
Backhouse, J. B., Braidwood, Ill 1870
Bain, D. S. E., Staff Surgeon Maj. 1868
Bain, Hugh U., Prince Albert, Man 1875
Baird, James G., Pakenham, O 1870
Baker, Albert, Dawlish Devon, 1848
Barclay, George, Parkhill, O 1870
*Barnston, James [ad. eun], 1856
Barrett, Jos. A., Fenaghvale, O 1884
Battersby, Charles, Port Dover, O 1861
Baynes, Donald, M.A., London, Eng 1876
Baynes, Geo Aylmer, Winnipeg, Man 1869
Beatty, D., Richmond, Carlt. Co., O 1862
*Beaudet, Alfred, 1865
Beaudry, Louis B., St. Cesaire, Q 1871
Beckstead, M., Lisbon, St Law Co. N.Y 1878
†Bell, James, Montreal 1877
*Bell, John, M.A., 1866
Bell, Robert, C.E., Ottawa 1878
Bell, Robert W., Peterboro, O 1873
Belleau, Alfred, Quebec 1862
*Bergeron, Joseph, 1870
Bergin Darby, Cornwall, O 1847
Bessey, William E., Montreal 1863
Bender, Prosper, Boston, Mass 1865
Benson, Joseph B., Chatham, N. B 1875
*Bibaud, Jean G., 1843
Blackader, Alex. D., B.A., Montreal 1871
Blacklock, John J., Chesterville, O 1851
*Blanchet, J. B., 1863
Blair, Robt. C., Three Rivers, Q 1865
*Bligh, John W., 1 65
Bogart, Irvine D., Mene, O 1859
*Bomberry, Geo. E., 1875
Bonesteel, S. A., Colombus, Neb 1881
Boulter, George H., Stirling, O 1852
Bowser, J. C., Kingston, N B 1883
*Boyer, Louis, 1842
*Boylan, Andrew A., 1857
Boyle, Albert D., Carbonear, Nfld 1877
*Bowman, William E., 1860
Bower, Silas J., Waddington, N Y 1865
*Bradley, William, 1869
*Braithwaite, Francis H., 1863
Brandon, John, Ancaster, O 1867
Breslin, William I., 46th Regiment 1847
Brigham, Josiah S., Philipsburg, Q 1848
Brissette, Henry R., Lowell, Mass 1871
Bristol, Amos S., Napanee, O 1850
Brodeur, Alphonse, Roxton Falls, Q 1863
Brodie, John, Honolulu, Sdwh Isl 1877
Brooks, Samuel T., St Johnsbury, Vt 1851
*Brouse, William H., 1847
Brouse, Jacob E., Brockville, O 1861
Brossard, J. B. J., Laprairie, Q 1875
Brown, Thos. L., Melbourne, Q 1881
Brown, J. L., Plattsville, O 1879
Brown, Peter E., Ste Anne de Bellevue, Q 1863
Brown, Harry, 405, W. Washington St, Chicago 1873
Brown, Chs. O., Barnston, Q 1882
Browne, Arthur A., B.A., Montreal 1872
Bruneau, Adolphe, Sorel, Q 1853
*Bruneau, Olivier T. [Hon], 1843
*Bruneau, Onésime, 1851
Bryson, William G., Fenelon Falls, O 1867
Bucke, Richard Maurice, London, O 1862
*Bucke, Edward H., 1852
*Buckle, John M. C., 1869
Buckley, William P., Prescott, O 1870
Bull, George J., Colorado Springs, Col. 1869
*Bullen, Charles F., 1864
Buller, Frank, Montreal 1879
Burgess, J. A., Listowell, O 1868
Burch, B. F., Walla Walla, Walsh Ter 1866
*Burland, John H., 1863
Burland, Samuel C., Chester, Penn 1877
Burland, William B., Montreal 1872
Burland, William H., Montreal 1875
Burland, Benj. W., Mineville, N Y 1882
Burrows, Philip P., Lindsay, O 1866
*Burnham, Robert Wilkins, 1860
*Burns, Alfred J., 1854
Burritt, Horatio C., Toronto, O 1863
Burwash, Henry J., Minneapolis, Minn 1879
*Butler, George C., 1865
Butler, Billa F., Stirling, O 1879
*Buxton, John N., 1849
Cahalan, James, Wyandotte, Mich 1880
†Cameron, Chas. E., Montreal 1883
Cameron, Paul, Alexandria, O 1881
Cameron, Duncan H., Emerson, Man 1877
Cameron, James C., Montreal 1874
Cameron, John D., Norway, Mich 1878
*Campbell, Donald Peter, 1860
Campbell, Francis Wayland, Montreal 1860
*Campbell, G. W., M.A., [ad eun], 1843
Campbell, J., New Zealand 1876
*Campbell, Samuel, 1866
Campbell, John, Seaforth, O 1869
Campbell, Lorne, London, Eng 1882
Cannon, Gilbert, Almonte, O 1877
Carmichael, D. A., Mar. Hosp. Serv, Pittsburg, Pa 1873
Carey, Augur D. L. [ad eun], 1864
Carman, Philip E., Detroit, Minn 1879
Carman, John B., Detroit, Minn 1879
Cassidy, David M., Med Supt. County Asylum, Lancaster, Eng 1867
Cassady, John F., Goderich, O 1865
*Carroll, Robert W. W., 1859
Carruthers, Geo., North Bedeque, PEI 1883
Carson, J. H., Lake Park, Minn 1881
*Carson, Augustus, 1843
Carter, Samuel A., Meadow Vale, O 1859
Case, W. Hermanus, Hamilton, O 1879
Casgrain, Charles E., Windsor, O 1851
Cattanach, Andrew J., Denver, Col 1871

Cattanach, Angus M., Dalhousie Mills, O 1882
Chagnon, Vincelaus G. B., Fall River, Mass 1861
1849
*Chaliner, Francis, Toledo, Ohio 1869
Cherry, William, 1862
*Chesley, George Ashbold, Bedford, Q 1860
Chevalier, Gustave, Iberville, Q 1873
Chevalier, Napoleon E., Ottawa, O 1868
Chipman, C. J. H., B. A., Alexandria, O 1878
*Chisholm, Alex., Roberts, Nfld 1879
Chisholm, Murdoch, Bay Lachute, Q 1872
Christie, George H., Pelaluma, Son Co., Cal 1865
Christie, John B., Lachute, Q 1848
Christie, Thomas, Chicago 1875
Christie, John H., B.A., 833 W 22nd St, Chicago 1882
Christie, Edmund, 1862
*Church, Charles H., Ottawa 1868
Church, Clarence R., Aylmer, Q 1855
Church, Coller M., Aylmer, Q 1880
Church, F. W., Montreal 1857
Church, Levi R., Pierrepont Mano, N. Y. 1864
Church, Mills K., 1846
*Church, Peter H., Winnipeg, Man 1881
Clarke, Hy. J., St Louis, Mo 1870
Clarke, Octavius H. E., Utica, N Y 1871
Clarke, Wallace, B.A., Pembina, Dakota 1884
Clarke, Henry J., Oakville, O 1870
Clarke, Richard A., Fordwych Rd. Kilburn Lond., Eng 1876
Clarke, F. G. B., Port Hope, O 1867
Clemesha, John W., Guillaume, Q 1866
Clement, Victor A., St. 1874
*†Cline, John D., B.A., Nanaimo, BC 1870
Cluness, Daniel, Winnipeg, Man 1865
Codd, Alfred, 1869
*Collins, Charles W., St Law. Co., NY 1878
Collison, R., Norfork, Iroquois, O 1876
Colquhoun, George, St David, Q 1870
Comeau, John B., Louisville, N Y 1876
Cook, Guy R., B.A., Napanee, O 1854
Cook, Hermon L., Aultsville O 1884
Cook, Sheldon E., Toronto, O 1866
Cooke, Charles H., Hull, Q 1869
Cooke, Sydney P., Wolfston, Q 1876
Cooke W. H., Chicago 1872
Copeland, William L., 1854
*Corbett, A. P. M.,
Corbett, William H., Brig. Surg Army Med Dept. 1854
Corlis, Josiah, St Thomas, O 1869
Cormack, Wm., Morristown, O 1881
*Corsan, John 1869
Cotton, C. L., Cowansville, Q 1877
Cousins, W. C., Ottawa, O 1882
*Cowley, Thomas McJ., 1870
Cowley, D. K., Granby, Q 1880
Cox, Frank, Charlottetown, P E I 1869
Coyle, Henry W., Sorel, Q 1876
Craig, Thornton, Capay, Cal 1876
Craik, Robert, Montreal 1854
Cram, Daniel C., Lawrence, Kan 1872
*Crawford, James [ad eun], 1854
Crichten, Stuart, Sonora, Cal 1865
Crothers, William, Stanbridge, Q 1876
*Culvers, Joseph B., 1848
*Cunynghame, W. C. Thurlow, 1858
Cutter, Frederick A., Sutton, Q 1873
Daly, Guy D. F., 1868
*Dansereau, Charles, 1842
Dansereau, Charles, 1869
*Dansereau, Pierre, 1835
Davies, Thomas B., New Edinburgh, O 1884
Davignon, F. F., Leadville, Col 1871

Dawson, R., BA., Montreal 1882
Dearden, G. A., St. Paul, Neb 1882
*Dease, Peter Warren, 1847
DeBonald, C. S., Berthier en haut, Q 1862
DeBoucherville, Charles B., Quebec 1843
DeGrosbois, T. B., Roxton Falls, Q 1868
Demorest, B. G. G., Stirling, O 1852
Derby, W. J., Rockland, O 1882
*Desaulniers, Antoine A., 1863
*DeCelles, Charles D., 1841
Dibblee, G. O., Moor's Mills, N B 1880
*Dice, George, 1864
*Dick, James R., 1842
*Dickinson, James S., 1846
*Dickinson, George, 1868
Dickson, William W., Pembroke, O 1863
Digby, F. Winniett, Brantford, O 1863
*Dodd John, 1864
Donnelly, C. H., Waresville, Texas 1860
*Dorion, Severe, 1843
*Dorland Enoch G., 1850
Dorland, James, Milwaukee, Wis 1875
Dougan, William, St. Catharines, O 1867
Douglass, James [Hon] 1847
Dowling, John F., Egansville, O 1875
Drake, Joseph M., Abbottsford, Q 1861
Dubuc, Charlemagne, Montreal 1864
*Ducket, Stephen, 1853
Duckett, William A., Montreal 1859
Dufort, Thadee A., St. Sebastian, Q 1865
Duhamel, Louis, Hull, Q 1860
Duncan, George, Fareham, Hants, Eng 1866
Duncan, Gideon M., Bathurst, NB 1871
Duncan, George C., London, Eng 1875
Duncan, James S., Surg. Mag. Army 1858
*Duncan, John, 1871
Duncan, John A., Duncanville, O 1884
Duncan, W. T., Fergus Falls, Minn 1882
Dunlop, H. A., Crookston, Minn 1882
*Dunn, William Oscar, 1843
Dunsmore, John M., 1870
Dupuis, Joseph B., Clarenceville, Q 1856
Easton, John, Brockville, O 1852
Eberle, Harry A., Kansas City, Mo 1876
Edwards, Eliphalet G., London, O 1855
Edwards, J. S., London, O 1880
Edwards, Oliver C., Qu'Appelle, N.W.T 1873
Elderkin, Edwin J., Avondale, Hants Co., N S 1884
Elkinton, A. G., Surg. Maj. Gren. Guards 1862
Ellison, S.R., 268 W 43rd St., N Y 1873
Emery, Gordon J., Minneapolis, Minn 1857
*English, T. F., 1858
*Erskine, John, 1860
Ethier, Calixte, St Eugene, Q 1867
Evans, Griffith, Vet Dept. Army, Woolwich, Eng 1864
Ewing, William, Hawkesbury, O 1873
Falkner, Alexander, Lancaster, O 1866
Falls, Samuel K., Wakefield, Q 1875
Farewell, G McGill, Princeton, O 1872
Farewell, W. G., Oshawa, O 1868
Farley, James T., Fremont Centre, Mich 1877
Farley, John J., Belleville, O 1873
Faulkner, George W., Stirling, O 1871
Faulkner, D. W., Foxboro, O 1878
Feader, H. C., Chicago, Ill 1881
Feilde, E. C., Prescott, O 1881
Fenwick, George E., Montreal 1847
Fergusson, A. A., Franklin Centre, Q 1864
Fergusson, Alex. R., Dalhousie Mills, O 1866
Ferguson W. A., B. A., Montreal 1884
*Finlayson, John 1834
Finnie, John T., Montreal, Q 1866
*Fisher, John, 1847

*Fitzgerald, James, 1865
Fortier, Louis A., St David, Q 1878
Fortin, Pierre, Montreal 1845
Fortune, Lewis M., Huntingdon, Q 1873
*Foster, Stephen Sewell, 1846
Fraleigh, William S., Gananoque, O 1869
Fraser, H. D., Perth, O 1881
Fraser, Alex. C., Manitowoc, Wis 1877
*Fraser, William, 1836
Fraser, William H., 1867
Fraser, Donald M., Stratford, O 1869
Fraser, Donald, Chicago, Ill 1868
Fraser, J. R., Medcalfe, O 1878
Freeman, C. M., Cape Sable Isl., N.S 1871
Fuller, W., Grand Rapids, Mich 1866
Fuller, H. LeRoy, B.A., Sweetsburg, Q 1870
Fulton, James H., Montreal 1863
Gale, Hugh, Bad Axe, Mich 1882
*Garvey, Joseph, 1852
Gardner, H. H., San Francisco, Cal 1878
Gardner, John J., Montreal 1883
Gardner, Matthew, Sacramento, Cal 1871
Gardner, William, Montreal 1867
*Gascoigne, Geo. E 1861
Gaviller, Edwin A., Hamilton, O 1873
*Gauvreau, Elzear, 1855
*Gauvreau, Lewis H., 1836
Gendron, Thomas, St. Raymond, Q 1866
Gernon, George W., Marieville, Q 1872
*Gibb, George D., 1846
Gibson, John B., Cowansville, Q 1855
Gibson, W. B., Dunham, Q 1878
*Gibson, Edward B., 1864
Gilbert, Henry L., Sherbrooke, Q 1875
Gillis, John A. F., Summerside, P.E.I. 1877
Gillies, John, Teeswater, O 1867
Gilmour, Angus A., Modesta, Cal 1868
*Giroux, Philippe, 1859
Girdwood, Gilbert P., Montreal 1869
Glen, C. W. E., Chambly, Q 1858
Godfrey, Robert, Montreal 1844
Godfrey, Abraham C., Freemantle, Southampton, Eng 1865
*Goodhue, P. J., 1875
Goforth, Franklin, Runcorn, Ches., Eng 1863
Gooding, Chas. E., Barbadoes, W. I. 1884
Gordon, C. M., Aylwin, O 1881
Gordon, Robert, Arlington, Ill 1868
*Gordon, W. W., 1863
Graham, Charles E., Hull, Q 1865
Graham, Geo. A., Montreal 1884
*Graham, Henry, 1863
Graham, Kenneth D., Ottawa, O 1875
Grant, Donald J., Woodbridge, O 1863
Grant, James A., Ottawa, O 1854
Grant, Jas. A., B.A., Ottawa, O 1882
Grant, William, Perth, O 1867
Gray, John S., Winnipeg, Man 1876
Gray, Thomas, Parsley, O 1879
Gray, James, Montreal, Q 1883
Gray, W. L., Pembroke, O 1881
Greaves, Henry C., Barbadoes 1877
Greenwood, F. S., St. Catharines, O 1878
Greer, T. A., C. SS. Minia, Halifax, N S 1876
*Grenier, L. P. A., 1863
Groves, George H., Carp, O 1879
Guerin, James J. E., Montreal 1878
Guest, Thomas F., St. Mary's, O 1873
Cu n, James, Durham, Co. Grey, O 1861
Gurd, David F., Montreal 1879
Gustin, William Claud, Detroit, Mich 1863
Hagarty Dan. M. J., Portage la Prairie, Manitoba 1866
*Hall, Archibald, [ad eun] 1848
*Hall, James B., 1866
*Hall, J. W., 1848
Halliday, James T., Peterboro, O 1865
*Hamilton, Andrew W., 1859
Hamilton, Charles S., Demorestville, O 1868
Hamilton, John R., Stratford, O 1871
*Hamilton, Rufus F., 1861
Hamel, Joseph A., Murray Bay, Q 1856
Hammond, J. H., Montreal 1869
Hannah, Franklin, Lansdowne, O 1879
Hanover, William, Seaforth, O 1875
Hanvey, C. J. B., Yale, B C 1883
Hart, F. W., St. Martinville, La 1835
Harvie, J. B., Troy, N Y 1881
Harvey Wm. A., Harriston, O 1874
*Harding, F. W., 1868
Harkin, Henry, 1867
*Harkin, William, 1858
Harkness, John, Dickinson's Corners, O 1862
Harkness, Andrew, New Lancaster, O 1869
Harrison, David H., St. Mary's, O 1864
Harrison, H. J., Moulinette, O 1883
Hart, George C., Prescott, O 1879
Hannington, E. B. C., Yale, B C 1875
Hayes, James, Simcoe, O 1866
Heard, C. De W., Charlottetown, P E I 1880
Hebert, P. Zotique, Whitehall, N Y 1873
†Henderson, Alex. A., Ottawa, O 1870
Henderson, E. G., 1874
*Henderson, Peter, A.M., 1848
Henderson, Andrew, Calgary, N W T 1880
*Henry, Walter, [Hon.] 1853
*Henry, Walter J., 1856
Henry, Wm. G., C.P.R. Mattawa, O 1883
Henwood, Alfred J., Brantford, O 1879
*Hervey, Jonas J., 1866
Hethrington, Harry, Hatley, Q 1872
Heyd, H. E., Buffalo, N Y 1881
Hickey Charles E., Morrisburg, O 1866
Hickey, Samuel A., B.A., Aultsville, O 1874
Higginson, H. A., Winnipeg, Man 1881
Hils, Joseph, Woonsocket, R I 1873
Hingston, W. H., Montreal 1851
Hockridge, Thos. G., London, Eng 1874
*Holden, Rufus, 1844
Holwell, John, Kingston, Jamaica 1868
*Holmes, Andrew F., [ad eun] 1843
Hopkins, Alf. J., Cookshire, Q 1883
Houston, D. W., Cohoes, N Y 1881
Howard, James, Lachine, Q 1867
Howard, Robert, St. John's, Q 1872
Howard, R. Palmer, Montreal 1848
†Howard, R. J. B., B.A., Montreal 1882
Howden, Robert T., Winnipeg, Man 1857
Howey, W. H., C. P. R. Matawan, O 1878
Howitt, Wm. H., Toronto, O 1870
Howland, Francis L., Huntsville, O 1867
Hulbert, E. Augustus, Brooklyn, N Y 1860
Hume, William L., Leeds, Q 1875
*Hunt, J. J., 1881
Hunt, Henry, Williamstown, O 1876
Hunt, J. H., Surg. Maj. Army, Med Dept. 1869
Hunt, Lewis G., B.A., Sheffield, Eng 1871
†Hurd, Ed. P., Newburyport, Mass 1865
Hurdman, Benj. F. W., Inveness, Q 1882
Hurlbert, George W., Thornbury, O 1859
Hurlbert, Richard W., Mitchell, O 1873
Hutchinson, John A., Bluevale, O 1878
Hutchison, Jas. A., Goderich, O 1884
Imrie, A. W., Detroit, Mich 1879
Inksetter, D. G., Copetown, O 1880
Irvine, James C., Liverpool, Eng 1866

Irwin, J. L., 205 E. Ohio St. Chicago 1879
Ives, Eli, Coaticooke, Q 1863
*Jackson, A. T., 1846
Jackson, Wm. Fred., Brockville, O 1873
Jackson, Joseph A., Manchester, N H 1879
*Jamieson, Alex., B.A., 1877
Jamieson, Thos. A., 1875
Jamieson, Chas. J., Winnipeg, Man 1879
Johnson, C. H., Almonte, O 1884
Johnson, James B., London, Eng 1876
Johnson, J. C., Surg. Maj. Army 1867
Johnson, J. R., Spring Valley, Minn 1883
Johnston, Thomas G., Sarnia, O 1871
Johnston, W. G., Sherbrooke, Q 1884
Jones, Charles R., Hatley, Q 1874
Jones, George N., Burlington, Iowa 1874
*Jones, Thomas W., [ad eun] 1854
*Jones, Jonathan C., 1865
Jones, Wm. Justus, Prescott, O 1856
Jones, H. J. M., Wabash Av. Chicago 1873
Josephs, G. E., Pembroke, O 1881
Kearney Wm. J., 1875
Keefer, Wm. N., B.A., Surg. Maj., Bengal Army 1869
1859
*Keeler, Thomas, Louisville, Ky 1867
†Kelly, Clinton Wayne, Rochester, Minn 1884
Kelly, Patrick N., 1846
*Kelly, Wm., St'n. Demerara 1873
†Kelly, Thomas, Exmore Lindsay, O 1864
Kempt, William, Montreal 1864
Kennedy, Richard A., 1858
*Kerr, James, Surg. Maj. Army 1862
Killery, St. John, St. Sylvestre, Q 1859
King, Wm. M. H., Compton, Q 1868
King, Reginald, A. D., Peterboro, O 1867
King, Richard, 1856
*Kirkpatrick, A., St. Paul, Minn 1869
Kittson John G., Winnipeg, Man 1873
Kittson, Edmund G., Aylmer, Q 1882
Klock, Robert H., 1866
*Knowles, James A., 1856
*Kollmyer, Alex. H., St. Philomene, Q 1856
Laberge, Ed., C. P. R'y., O 1884
Landor, Thos. H., 1877
Lane, John A., Owen Sound, O 1876
Lang, Christopher L., St. Mary's, O 1881
Lang, W. A., 1866
*Lang, Thomas D., Amherstberg, O 1875
Langlois, O. X., 1865
*Langrell, Richard T., Montreal 1847
Larocque, A. B., Halifax, N S 1883
Lathern, J. S., Deer Lodge, Mon 1881
Laurin, Edgar J., Bond Head, O 1863
Law, D. W. C., Coleraine, Irel 1877
Law, William K., London, Eng 1879
†Lawford, John B., 1862
*Lawrence, Henry J. H., Melbourne, Q 1866
Leavitt, Julius, Montreal 1851
Leclere, George, Lancaster, O 1861
Leclair, Napoleon, 1858
Lee, James C., 1849
*Lee, John Rolph, Brockville, O 1879
Lefebvre, John M., Valleyfield, Q 1866
Legault D., Salaberry de 1850
Lemoine, C., St. Pierre, Isle d'Orleans 1848
Lepailleur, Leonard, Montreal 1843
Leprohon, John L., New York, U.S. 1876
Levi, Reuben, St. Johns, Q 1861
Lindsay, Heriot, 1862
*Lister, James, 1879
*Lloyd, H. W., 1872
*Locke, C. F. A. 1842
*Logan, David D., Iona, M ch 1880
Logan, Robert, 1833
*Logie, William, 1844
*Long, Alexander, 1866
Longley, Edmund, Quebec, Q 1848
Longpre, Pierre F., Sherbrooke, Q 1883
Loring, J. Brown, 1850
*Loupret, Andre, Russell, O 1870
Loux, William, Montreal 1855
Loverin Nelson, Ayr, O 1876
Lovett, William, 1869
*Lucas, T. D'Arcy Campbellton, N B 1881
Lunam, H. B.A., Surg. Maj. Army 1862
Lundy, E. L., Minneapolis, Minn 1879
Lyford, Chs. C., Shawville, Q 1861
Lyon, Arthur, Chicago, Ill 1880
Maas, Rudolph J., 1847
*MacDiarmid, John D., St. Paul, Minn 1863
MacDonald, Angus, 1853
*Macdonald, Colin, Sutton, Q 1881
Macdonald, R. T. E.,
Macdonald, Roderick Æneas, Stony Mountain, Man 1874
MacDonell, Æneas, Ottawa 1849
MacDonnell, R. L., B.A., Montreal 1876
MacFarlane, William, Almonte, O 1869
Macfie, James, Fort Covington, N Y 1869
MacIntosh, Robert, Rapid City, NWT 1863
Mack, Francis Lewis, Amherstburg, O 1862
1865
*Mackie, J. R., 1859
*Macklem, Samuel S., Sarnia, O 1867
MacLean, Archibald, 1870
*Macnabb, Francis A. L., Kensington, P E I 1883
Macneil, Alex., Chicago, Ill 1867
McArthur, Robert D., Port Elgin, O 1879
McArthur, John A., Martintown, O 1874
McBain, John, Montreal 1850
McCallum, Duncan C., Hopkinton, Mass 1878
McCann, J. J., B.A., Chicago, Ill 1867
McCarthy, W., 1872
*McConkey, T. C., Montreal 1873
McConnell, John B., 1864
*McCord, John D., East Farnham, Q 1882
McCorkill, R. K. C., Richmond, Q 1874
McCormick, Andrew G., Lucknow, O 1869
McCrimmon, Donald A., Kincardine, O 1878
McCrimmon, John, Palermo, O 1878
McCrimmon, Milton, St. Mary's, O 1879
McCullough, George, [Hon.] 1843
*McCullough, Michael, A., Baie Verte, N B 1879
McCully, Oscar J. M. Chatham, N B 1866
McCurdy, John. Dunvegan, O 1875
McDermid, Wm., Athol, O 1867
McDiarmid, Donald, Hensall, O 1873
McDiarmid, James, Paisley, O 1883
McDonald, Alex., Montreal 1880
†McDonald, John A., Acton Vale, Q 1873
McDonald, Jos. D. A., Spencer, Iowa 1880
McDonald, R. C., Cornwall, O 1834
McDonald, Roderick, Trinity, Texas 1882
McDonald, Alex. R., Alexandria, O 1874
McDonnell, Alex. R., Montreal 1852
McDonell, Angus C., Ottawa, O 1864
McDougall, Peter A., 1847
*McDougall, Peter A., Winnipeg, Man 1880
McEachran, W., Carlton Place, O 1870
McEwan, Findlay, Lowell, Mass 1881
McGannon, E. A., Drummondville, O 1857
McGarry, James, Iona, O 1867
McGeachy, William, 1848
McGill, William, 1861
*McGillivray, Donald, Beebe Plain, Q 1867
McGowan, Henry W., 1849
McGrath, Thomas, 1861
*McGregor, Duncan, London, O 1879
McGuigan, W. J., 1873
*McGuire, Bernard D.,

McIlmoyl, Henry A., Clayton, N Y 1876
McInerney, Jas. P., Kingston, N B 1884
McInnes, Walter J., Victoria, O 1865
McIntosh, James, Vankleek Hill, O 1859
McIntosh, Donald J., Vankleek Hill, O 1870
McIntyre, Peter A., Souris, P E I 1867
McKelcan, George Lloyd, Hamilton, O 1860
McKenzie, B. E., B.A., Riverside, Toronto, O 1880
McKenzie, K. A. J., Portland, Oregon 1881
McKay, John, Woodville, O 1869
McKay, Walter, Courtland, O 1854
McKinley, John K., Bristol, Q 1878
McLaren, Peter, Brudenell, P E I 1869
McLaren, Peter, Paisley, O 1861
McLaren, Peter, Ormstown, Q 1872
McLaren, D. C., B.A., Montreal 1880
*McLean, Alexander, 1860
McLean, J. W., Point Hastings, N S 1883
McLean, Thos. N., Fergus Falls, Minn 1882
McLean, J. M., B.A., Pictou, N S 1884
McLellan, Jas. H., Summerside, P E I 1884
McLeod, Arch., B.A., New Westminster, B C 1883
McLeod James, Charlottetown, P E I 1873
McMicking, George, Goderich, O 1851
McMillan, Æneas J., Manitou, Col 1874
McMillan, Louis, J. A., Mansonville, Q 1860
McMillan, John, Pictou, N S 1857
McMurray, Samuel, 1841
*McNaughton, E. P., 1834
McNee, Stewart, Rosemount, O 1879
McNeece, James, 1869
McNeil, Ernest, Vermont River, P E I 1870
McNulty, M., Brashers Falls, N Y 1880
McQuillen, James, Marquette, Mich 1874
*McRae, George, 1876
McTaggart, Alexander, London, O 1869
*McVean, John M., 1865
Madill, John, Alliston, O 1867
Maher, J. J. E., New York 1883
Major, George W., B.A., Montreal 1871
Malcolm, John Rolph, Scotland, O 1861
*Malhiot, Alfred, 1846
Malloch, Edward C., Ottawa, O 1863
*Malloch, William B., 1867
Mallory, Albert E., Warkworth, O 1872
Marceau, Louis T., Napierville, Q 1872
Markell, Richard S., Cloverdale, Cal 1867
*Marr, Israel P., 1849
Marr, Walter H., W. 33rd St. N. York 1859
Marston, Alonzo W., Hull, Q 1871
Marston, John J., U. S. Army 1863
Martel, Ovide, Montreal 1883
Mason, J. L., M.A., Brailsford, Derby, Eng. 1863
Mattice, Rich. J., Cornwall, O 1875
‡Mathieson, John H., St. Mary's, O 1871
*Mathieson, Niel, 1870
Mayrand, William, St. Andrews, Q 1847
Meahan, J. C., Bathurst, N B 1884
Meane, John, Staff Srg. Maj. Army 1869
Meek, Jas. A., 20 W. 25th St. New York 1875
*Meigs, Malcolm R., 1865
Menzies, John B., Ft. Gratiot, Mich 1879
*Meredith, Thomas L. B., 1842
Merritt, D. P., B.A., Fitzroy Harbor, O 1884
Metcalf, Henry J., Thurso, Q 1876
Mewburn, F. H., Winnipeg, Man 1881
Mignault, Henri A., St. Denis, Q 1860
Mignault, L. D., B.A., Montreal, Q 1880
Miller, R., Surg. N. W. Mounted Police, Battleford, N W T 1870
Mills, Thos. W., M.A., Montreal 1878
Miner, Frank L., Abercorn, Q 1877
*Mines, William W., 1874
Mitchell, Fred. H., Winnipeg, Man 1871
Moffatt, John Edw. Staff Sur. Army 1862
Moffat, Walter, Pensacola, Fla 1858
Molson, William A., Montreal 1874
Mongenais, Napoleon, Rigaud, Q 1865
Monk, George H., Dillonton, Q 1875
Moore, Charles S., London, O 1874
Moore, Jehiel T., Tilsonburg, O 1874
Moore, Joseph, 1852
Moore, Richard, 1853
Moore, Robert C., St. Paul, Minn 1869
Moore, William, Algonac, Mich 1881
*Morin, Josh. [Hon.], 1859
*Morrison, David R., 1869
Morrison, John, M.A., Waddington, N Y 1872
Mount, John W., Montreal 1851
Munro, Alexander, Montreal 1876
Munro, James T., Dominionville, O 1872
Muckey, F. S., Medford, Minn 1883
*Murray, Charles H., B.A., 1876
Musgrove, W. J., W. Winchester, O 1882
Neilson, W. J., Winnipeg, Man 1878
Nelles, J. M., Canton, Ill 1875
Nelles, John A., London, O 1850
*Nelson, Horace, 1851
*Nelson, Wolfred [Hon.], 1848
Nelson, Wolfred D. E., Panama, C A 1872
Nelson, W. M. F., Montreal 1884
Nesbitt, James A., Salt Lake City, Utah 1868
Nicol, William R., Watkins, N Y 1872
*Nicholls, Chs. R., 1862
Norton, Thomas, Horning's Mills, O 1874
Oakley, William D., Streetsville, O 1877
O'Brien, Thomas B. P., Srg. Maj. Army 1862
O'Brien, Robert S., Nanaimo, B C 1873
O'Brien, David, Renfrew, O 1873
O'Brien, T. J. Pierce, Kansas City, Mo 1882
O'Brien, Timothy, Brudenell, O 1884
O'Callaghan, Cornelius H., 1854
O'Callaghan, T. A., B.A., Wo'ster Mass 1880
*O'Carr, Peter, 1857
*O'Connor, Daniel A., 1867
O'Dea, James J., Stapleton, Staten Island, N Y 1859
Odell, William, 1849
O'Keefe, Henry, Minto, Dakota 1882
Ogden, H. V., B.A., Milwaukee, Wis 1882
O'Leary, James, St. Pascal, Q 1866
O'Leary, Patrick, Montreal 1859
Oliver, James W., Clifton, O 1868
O'Reilly, Charles, Toronto, O 1867
Osler, William, Montreal 1872
*Padfield, Charles W., 1868
Painchaud, Edward, S. L., Varennes, Q 1848
Pallen, Montrose A., New York 1864
Palmer, Loran L., Toronto, O 1866
*Paquin, Jean M., 1843
*Paradis, Henri, 1846
*Paradis, Pierre E., 1867
*Park, George A., 1877
Parke, Charles S., Quebec 1866
Parker, Rufus S., Canton, Mass 1866
*Paterson, James M., 1855
Paterson, James, Winnipeg, Man 1864
*Pattee, George, 1858
Pattee, Richard P., Plantagenet, O 1874
*Patton, Edward K., 1867
Pegg, Austin J., Cayuga, O 1872
Pegg, Charles H., Chicago, Ill 1867
Perks, W. C., Dundas, O 1881
Perrault, Victor, St. Eustache, Q 1852
Perrier, John, Cleveland, Ohio 1868
Perrigo, James, M.A., Montreal 1870
Perry, H. R., Coteau Landing, Q 1873
Phelan, C. J. R., Waterloo, Q 1865

Phelan, James B., Chicago, Ill 1874
*Phelan, Joseph P., 1854
Philip, David L., Brantford, O 1863
Phippen, S. S. C., Owosso, Mich 1883
*Picault, Chas., 1857
Pickup, John W., Brockville, O 1867
Pinsonneault, B., Chicago, Ill 1880
*Pinet, Alexis, 1840
Pinet, Alex. R., St Laurent, Q 1864
Poole, H. E., Ormstown, Q 1880
Porteous, Wm., Pembroke, O 1884
Poussette, A. Courthope, Sarnia, O 1860
Powell, Israel Wood, Victoria, B C 1860
Powell, Newton W., Cobourg, O 1850
†Powell, Robert H. W., Ottawa, O 1876
Powers, George W., Eaton Cor., Q 1861
Powers, Lafontaine B., Port Hope, O 1867
Pringle, George, Cornwall, O 1855
Pringle, A. F., Northfield, Minn 1880
Prosser, Wm. O., Le Mars, Ply Co. Iowa 1874
Proudfoot, John S., Susp'on Bridge, O 1868
Proudfoot, Alex., Montreal 1869
Proulx, Phileas, Montreal 1844
*Prevost, E. Gilbert, 1859
Pulford, F. W., Stonewall, Man 1880
*Quarry, James J., 1868
*Quesnel, Jules M., 1849
Rae, John Hamilton [Hon], London, Eng 1853
*Rainville, Pierre, 1863
Rambault, J., Dep. Insp. Gen. Army 1859
*Rattray, Charles J., 1871
Rattray, James C., Cobden, O 1874
Raymond, Olivier, Montreal 1850
Read, Herbert H., Halifax, N S 1861
Redner, Horace P., Lonsdale, O 1864
Reddick, Robert, West Winchester, O 1874
Reddy, Herbert L., B.A., Montreal 1876
*Reddy, John [ad eun], 1856
Reed, Thomas D., Montreal 1871
Reed, John A., Sault Ste Marie, O 1871
Reid, Alex. Peter, Halifax, N. S 1858
*Reid, Kenneth, 1864
Renner, W. Scott, Jordan Station O 1884
Reynolds, T. W., Hamilton, O 1881
Reynold, Roberts T., Berlin, O 1836
*Reynolds Thomas, 1842
Richard, Marcel, Manchester, N H 1864
Richmond, P.E., Mount Pleasant, Minn 1873
Ridley, Henry Thomas, Hamilton, O 1852
*Rielle, Etienne R. E., 1857
Riley, Oscar H., Moer's Forks, Clinton Co., N Y 1879
Rinfret, Ferdinand R., Quebec 1868
*Rintoul, David M., 1854
Richardson, John R., Archer av., Chicago 1865
Riordan, B. L., Toronto, O 1880
Ritchie, Arthur F., B.A., Duluth, Minn 1876
Ritchie, John L., Army Med. Dept. 1874
*Roberts, Edward T., 1859
Roberts, John E., B.A., Monsague, Jam., W I 1867
Robertson, James E., Montague, P E I 1865
Robertson, David, Milton, O 1864
Robertson, David T., Lennoxville, Q 1857
Robertson, Patrick, St Andrews, Q 1867
Robillard, Adolphe, Ottawa, O 1860
Robinson, Stephen J., Brantford O 1876
Robinson, Wesley, Markham, O 1877
Robitaille, Louis, New Carlisle, Q 1860
Robitaille, L. T., Quebec 1858
†Roddick, Thomas G., Montreal 1868
Rodger, Thomas A., Montreal 1869
Rogers, E. J. A., Denver, Col 1881
Rogers, Amos, Ottawa, O 1874
Rooney, R. F., Auburn, Placer Co. Cal 1870
†Ross, George, M.A., Montreal 1866
†Ross, James, B A., Dundas, O 1881
Ross, G. T., Montreal 1880
Ross, L. D., Montreal, Q 1884
Ross, W. K., Goderich, O 1883
Ross, Thomas, 1863
*Ross, Henry, 1872
Ross, William G., Ashburt, New Z 1871
*Ross, Wm. D., 1875
Ross, J. W., New York, N.Y. 1881
Rowell, G. B., Abbottsford, Q 1884
Rugg, Henry C., Perth, O 1865
*Rumsey, William, 1859
Rutherford, M. C., Fergus Falls, Minn 1879
Rutherford, Clarendon, M.A., Chicago 1882
Rutledge, And. J., Bayfield, O 1883
Ruttan, Allen, Napanee, O 1852
Ruttan, A. M., New York 1880
Ruttan, R. F., Montreal 1884
*Sabourin, Moise, 1849
Sampson, James [Hon], 1847
Sanderson, George W., Toronto, O 1850
Savage, Thos. Y., Thistletown, O 1854
Savage, Alex. C., 1866
*Sawyer, James H., 1863
*Schmidt, Samuel B., 1847
*Schofield, David T., 1854
Scott, John G., Hazeldean, Co Carlt, O 1879
Scott, Stephen A., 1854
*Scott, Wm. E., 1844
Scott, Wm. F., Hull, Q 1875
Scott, W. McE., Winnipeg, Man 1883
*Scriven, George Augustus, 1846
Seager, Francis R., Brigden, O 1870
Secord, Levi, Bright, O 1876
Setree, Edward W., Heuvelton, N Y 1878
Seguin, André, Rigaud, Q 1848
Senkler, A. E., St Paul, Minn 1863
Serviss, T. W., Selina, Frisco Co., Cal 1881
Seymour, M. M., Winnipeg, Man 1879
*Sewell, Stephen C. [ad eun], 1843
Sewell, Colin [ad eun], Quebec 1869
Shanks, J. C., Howick, Q 1881
Sharpe, Wm., South Toledo, Ohio 1872
Shaw, Alexander, Bancroft, Mich 1882
Shaw, W. F., Bracebridge, O 1879
Shaver, Peter Rolph, Stratford, O 1854
Shaver, W. H., Wales, O 1883
*Shaver, R. N., 1857
Shepherd, Francis J., Montreal 1873
Sherk, George, Cheapside, O 1865
Shoebottom, Henry, Port Huron, Mich 1857
Shufelt, W. A., New York, N.Y. 1881
Sihler, G. A., Simcoe, O 1883
*Simard, Amable, 1852
Simpson, Thomas, Montreal 1854
Sinclair, Coll, Aylmer, O 1874
Small, H. B., Ottawa 1880
Smallwood, John R., St Clet, Q 1868
Smellie, T. S. J., M.A., Pr Arthur's Ldg, O 1877
Smiley, J. S., Portsmouth, Iowa 1880
*Smith, Daniel D., 1868
Smith, Daniel F., Walkerton, O 1878
Smith, E. H., Fullarton, Neb 1881
*Smith, Edward, W., 1859
Smith, John, Portland, Oregon 1879
Smith, Norman A., Prelighsburg, Q 1870
Smith, William, Lachute, Q 1876
Smith, Edward W., A.B. West Merriden, Conn 1882
Smith, W. A. de W., Montreal Q 1884
Smyth, H. E., Marlboro', Mass 1884
Smythe, T. W., Colonel 100th Regt 1848
Snider, Frederick S., Teeterville, O 1876
Sparham, Terence, Brockville, O 1841

Sparham, E. B., 1852
Spear, Andrew M., Danville, Q 1874
Spencer, R., Brandon, Man 1879
*Squire, William Wood, M.A., 1864
Stafford, Fred. J., Little Bay, Nfld 1878
Stanton, George, Simcoe, O 1868
Stark, George A., Milwaukee, Wis 1872
*Staunton, Andrew, 1846
Stephen, William, Montreal, Q 1881
Stevens, Alex. D., Dunham, Q 1857
Stevenson, Charles N., Coaticook, Q 1870
Stevenson, Hans, Chelsea, Q 1880
Stevenson, J. M., Bryanston, O 1856
*Stevenson, John L., 1855
*Stevenson, John A., 1873
Stevenson, Robert A., Strathroy, O 1871
Stewart, Alexander, Palmerston, O 1872
*Stewart, John Alexander, 1862
Stewart, James, Montreal, Q 1869
Stewart, J. O., 1880
Stephenson, James, Iroquois, O 1850
Stimpson, Alfred O., Thompson, Pa 1868
St. John, Leonard, Chicago, Ill 1872
Storrs, Arthur, Mexborough, York, Eng 1876
*Strobridge, James Gordon, 1862
Struthers, A. D., Frelighsburg, Q 1881
Struthers, K. B., Rochester, Minn 1883
Stroud, Charles S., Norway, Benton Co., Iowa 1876
*Sutherland, Fred. Dunbar, 1864
Sutherland, Walter, Valleyfield, Q 1871
*Sutherland, William, 1536
*Sutherland, William, 1870
Sutherland, William Dunbar, Montreal 1879
Switzer, Egerton R., Salina, Ks 1865
Tabb, Silas E., M.A., Sherbrooke, Q 1869
*Tait Henry Thomas, 1860
Taylor, Wm. H., Peterboro, O 1859
Taylor, Sullivan A., Gilmanton, N H 1870
Tew, Herbert S., Wakefield, York, Eng 1864
Temple, James A., Toronto 1865
Thayer, Linus O., Montreal 1859
*Theriault, F. D., 1863
Therien, Honore, Bedford, Q 1863
*Thompson, James, 1842
Thompson, Robert, Brantford, O 1852
Thompson, Wm. A., New Richmond, Q 1882
Thornton, Hastwell W., B.A., New Richmond, Q 1882
Tracey, A. W., West Meriden, Conn 1873
Trenholme, Edward Henry, Montreal 1862
*Trudel, Eugene H., 1844
Trueman, J. E., Macan, N S 1881
Turgeon, Louis G., Montreal 1860
Tuzo, Henry A 1853
†Tunstall Simon J., B.A., Litton, B C 1875
Usher, Henry, Walkerton, O 1861
Vannorman, J. M., Detroit, Mich 1850
Vercoe, Henry L., Seaforth, O 1865
Vicat, John R., Melbourne, Q 1867
†Vineberg, Hiram N., Portage la Prairie, Man 1878

*Deceased.

Wagner, A. Dixon, Cornwall, O 1872
Wagner, G. C., Dickinson's Ldg, O 1881
*Wagner, William H., 1844
Wakeman, William, Quebec 1866
Wales, Benjamin N., Robinson, Q 1874
*Walker, Robert, 1851
Walker, Felix D., Launching, P E I 1884
Wallace, Isaac U., Milton, Q 1874
Walsh Edmond C., Madrid, N Y 1866
Walton, George O., Barbadoes, W I 1873
Wanless, John R., Dunedin, New Z 1867
Ward, William T., Morristown, Minn 1873
Ward, Michael O'B., Montreal 1875
Warren, Frank, Brooklin, O 1872
*Warren, Henry, 1860
Waugh, William, London, O 1872
Weagant, C. A., Yarker, O 1879
Webb, James T. S., Montreal 1871
Webster, Arthur D., Edinburgh, S 1878
Weilbrenner, Remi, Port Neuf, Q 1851
*Weir, Richard, 1842
*Wherry, John, 1862
Whitecomb, Josiah G., Omaha 1848
Whiteford, James W., Winnipeg, Man. 1873
Whiteford, Richard, Toledo, Ohio 1857
Whitwell, W. P. O., Philipsburg, Q 1860
*Whyte, Joséph A., 1870
Wigle, Hiram, Wiarton, O 1875
*Widmer, Christopher [Hon] 1847
*Wilcox, Marshall B., 1868
Williams, J., Boston, Mass 1881
Williston, H. V., M.A., Newcastle, NB 1879
Wilson, Benjamin S., Belleville, O 1866
*Wilson, Robert M., 1850
Wilson, William, Ottawa 1857
Wilson, Samuel, F., Millstream, Kings Co., N.B 1884
*Wilscam, John Wilbrod, 1846
Woolverton, Algernon, M.A., Hamilton, O 1867
Woods, David, Staff Surgeon Army 1860
Wood, George C., 1849
Wood, George, Faribault, Minn 1863
Wood, Ed. S., Faribault, Minn 1883
Wood, Hannibal W., Knowlton, Q 1865
Woods, Jno. J. E., Aylmer, Q 1875
Woodful, Sam. Pratt. Surg. Maj 1864
Woolway, C. J. Copper Falls, Mich 1875
*Workman, Benjamin, 1853
Workman, Joseph, Toronto 1835
Worthington, Edward [ad eun] Sherbrooke, Q 1868
Wright, John W., B.A., Picton, O 1878
Wright, Henry P., Ottawa 1872
Wright, Stephen, Ottawa, O 1859
Wright, William, Montreal 1848
Wye, John H., 22 Upper Woburn Pl, London 1868
Young, Philip R., Clarenceville, Q 1876
Young, Robert C., Ridgetown, O 1873
Youker, William, Stirling, O 1870

†Medallist.

MASTERS OF ARTS.

(For Addresses see list of Bachelors of Arts and of App. Science.)

Allworth, Rev. John, B.A 1875
Amaron, Rev. Calvin E., B.A 1880
Archibald, John S., B.A 1877
*Bancroft, Rev. Charles [ad eun] 1856
Bancroft, Rev. C., Junior, B.A 1870
Baynes, Donald, B.A 1867
Bethune, Meredith Blenkarne, B.A 1869
*Bothwell, John A., B.A 1868
Bowman, Wm. M....(Hon) 1859
Boyd, John, B.A 1864
*Butler, Rev. John....(Hon) 1852
Cameron, Rev. James, B.A 1874
Carmichael, Rev. J. B., B.A 1871
Chamberlin, Browne, B.C.L. (ad eun) ... 1857
Chandler, George H., B.A 1879
Chapman, Rev. Charles, M.A., London Univ. (ad eun) 1872
Clarke, Wallace, B.A., M.D 1872
Clowe, John D., B.A 1874
Cornish, Rev. George, B.A 1863
Craig, James A., B.A 1883
Crothers, Rev. William J., B.A 1875
Cunningham, Rev. Thos. E., B.A 1883
*Cushing, Lemuel, B.A., B.C.L 1867
Dart, William J., B.A 1874
Davidson, Rev. James, B.A 1866
Davidson, Charles P., B.A., B.C.L 1867
Davidson, Leonidas H., B.A 1867
Dawson, Rankine, B.A., M.D 1882
Dawson, William B., B.A 1879
Dey, Rev. William J., B.A 1875
Dewey, Finlay McN., B.A 1882
DeWitt, Caleb J., B.A 1864
Dickson, George, M.A., Victoria Col. (ad eun) 1879
Donald, James T., B.A 1882
Dougall, John Redpath, B.A 1867
Duff, Rev. Archibald, B.A 1867
Duncan, Alexander E., B.A 1875
Ells, Robert, B.A 1875
Empson, Rev. John, B.A 1879
Forneret, Rev. George A., B.A 1880
*Gibb, George D., M.D....(Hon) 1856
Gibson, Thomas A....(Hon) 1856
Gilman, Francis E., B.A 1865
Gould, Edwin, B.A 1860
Graham, John H....(Hon) 1859
Green, Joseph, B.A 1864
*Haight, Frederick S., M.A., Williams Col (ad eun) 1881
Hall, Rev. Wm., B.A 1867
Hart, Lewis A., B.A 1869
*Hicks, Frank W., B.A 1870
Hindley, Rev. John, B.A 1873
Howe, Henry Aspinwall....(Hon) 1855
Jones, Montgomery, B.A 1873
Kahler, Frederick A., B.A 1872
Keays, Chas. H., B.A 1883
Kemp, Rev. Alexander F ....(Hon) 1863
Kennedy, George T., B.A 1872
Kennedy, Rev. John, B.A 1860
Kirby, James, B.A., B.C.L 1862
Krans, Rev. Edward H., B.A 1875
Laing, Rev. Robert, B.A 1877
*Leach, Robert A., B.A., B.C.L 1860
Lyman, A. Clarence, B.A 1881
Lyman, Henry H., B.A 1880
McCord, David R., B.A., B.C.L 1867
McGregor, Duncan, B.A 1864
McGregor, James, B.A 1868
*McIntosh, John, B.A 1873
McLaren, John R., B.A 1868
McLennan, Rev. Duncan H., B.A 1875
Markgraf, Charles F. A....(Hon) 1865
Mason, James L., B.A 1863
Mattice, Corydon J., B.A 1862
Morris, Alex., B.A., B.C.L 1852
Morrison, Rev James D., B.A 1868
Morrison, John, B.A 1870
Munro, Rev. Gustavus, B.A 1874
Newnham, Rev. Jarvois A., B.A 1883
*Perkins, John A., B.A 1862
Perrigo, James, B.A 1869
*Plimsoll, Reginald J., B.A 1867
Ramsay, Robert A., B.A., B.C.L 1867
Robins, Sampson Paul, B.A 1868
*Rodger, David....(Hon) 1856
Ross, Geo., B.A., M.D 1866
Roy, Rev. James, M.A., Victoria Col. (ad eun) 1879
Scrimger, John, M.A., (Toronto University (ad eun) 1884
Shaw, Rev. W. J., M.A., Victoria Col. (ad eun) 1880
*Stewart Rev. Colin Campbell, B.A 1870
Sweeney, James F., B.A 1881
Tabb, Silas Everett, B.A 1869
Taylor, Rev. Ernest M 1882
Thornburn, John....(Hon) 1861
Trenholme, Norman W., B.A., B.C.L ... 1878
Torrance, Rev. Edward F., B.A 1874
Wallace, Rev. R. W., B.A 1875
Ward, George B., B.A 1880
Whillans, Rev. Robert, B.A 1883
Wicksteed, Richd. M., B.A., B.C.L 1866
*Wilkie, Daniel....(Hon) 1869
Wilson, John, B.A 1870
Wotherspoon, Ivan Tolkein, B.A 1869

*Deceased.

MASTERS OF ENGINEERING.

Dawson, William B., B.A., B.A.Sc 1880
McLeod, Clement H., B.A.Sc 1878
Waddell, J. A. L., B.A.Sc. (ad eund) 1882

MASTERS OF APPLIED SCIENCE.

Adams, Frank, B.A.Sc., Geological Survey, Ottawa 1884
Thompson, Wm. T., B.A.Sc 1882
Wardrop, Norval, B.A.Sc 1884

BACHELORS OF CIVIL LAW.

*Abbott, Christopher C 1850
Abbott, Harry, 11 Hospital St., Montreal 1878
Abbott, John J. C., 11 Hospital St., Montreal 1854
Abbott, John B., 11 Hospital St., Montreal 1874
Adam, Joseph, 38 St James St., Montreal 1878
Adams, Abel, Waterloo 1867
Allan, Irvine 1882
Alguire, J. C., Montreal 1880
‡Archibald, John Sprott, M.A., 102 St. Francois Xavier St., Montreal 1870
Archambault, Henri 1874
Archambault, Joseph L.C., 488 Craig St., Montreal 1871
Armstrong, Louis, 11 St. James St., Montreal 1861
Ascher, Isidore G., Montreal 1863
‡Atwater, Albert W., Montreal 1880
Austin, Joseph E., Montreal 1880
Aylen, John, M.D., Aylmer, Q 1861
Aylen, Peter, B.A 1854
Aylmer, Henry, Hon., jun., Melbourne, Q 1881
*Badgley, Frank H 1852
Bagg, Robert Stanley Clark, 19 St. James St., Montreal 1871
Bampton, George E., Lachute 1879
Baril, Joseph, Montreal 1884
Barnard, Arch. E., Montreal 1882
Barnston, John G., Manitoba 1856
Barry, Denis, 6 St. James St., Montreal. 1872
Baynes, Edward Alfred, Calgary, N.W.T. 1867
Baynes, O'Hara, Montreal 1874
Beaudin, Simeon, 44 St. Vincent St., Montreal 1878
Beauchamp, Joseph, 89 St. James St., Montreal 1878
Beaudet, Omer, Lotbiniere, Q 1882
Bergeron, Horace, Beauharnois, Q 1877
Benjamin, Lewis N., Montreal 1863
Beaubien, Nap. H., Yamachiche, Q 1877
Berthelot, Louis H., 7 Beaver Hall Sq., Montreal 1878
Berthelot, Jos. B., Montreal 1880
‡Bethune, Meredith B., M.A., 11 St. Sacrament St., Montreal 1869
Birny, Jean, B.S., Montreal 1880
Bisaillon, Francois Joseph, 11 Place d'Armes Hill, Montreal 1876
Bissonnette, Louis A., 36 St. Vincent St., Montreal 1878
*†Bothwell, John A., B.A 1866
Bouthillier, Charles F., 57 Union avenue, Montreal 1867
Boyd, John, B.A., Toronto 1864
Bowie, Duncan E., Montreal 1873
Brakenridge, James W., Montreal 1880
Branchaud, Athanase, 14 St. James St., Montreal 1862
Brooke, C. J., 58 St. Francois Xavier St. Montreal 1878
Brooke, George H., Aylmer, Richmond, Q 1882
Buchan, John S., St. Andrews, Q 1884
Bullock, Wm. E., B.A 1863
Busteed, E. B., 273 Bleury St., Montreal. 1879
Butler, Thomas P., Montreal 1865
Cansey, George, Bedford, Q 1877
Calder, John, 67 St. Sulpice St., Montreal 1871
Carden, Henry 1860
Caron, Adolphe P., Quebec 1865
Carter, Christopher B., 103 St. Francois Xavier St., Montreal 1866
*Carter, Edward, Q.C., Montreal 1864
Carter, Geo. F., 31 Cadieux St., Montreal 1879
Chamberlin, Brown, Ottawa 1850
Chamberlain, John, jun 1867
Chambers, A., Busteed, Napanee 1875
Charland, Alfred 1863
Charette, Pierre P., Montreal 1877
Chauret, Amedee, Montreal 1873
Chauveau, Alexandre, Quebec 1867
Choquette, Frs. X 1874
Choquet, Ambroise, 42 St. Sulpice St., Montreal 1865
Cloran, Henry Joseph, Montreal 1882
Cornell Z. E., Montreal 1879
Couillard, Edouard, 56 St. Gabriel St., Montreal 1875
Couillard, Jean B 1866
Coutlee, Lewis W. P., Hull, Q 1873
Conroy, Robert Hughes, Aylmer, Q 1869
Cooke, Joseph P., Montreal 1880
Cooke, Geo. F., B.A 1884
Cowan, Robert C., 235 St. James St., Montreal 1862
Crankshaw, James, Montreal 1882
Creighton, J. G. Aylwin, Montreal 1880
*Crimmen, W. J 1878
Cross, A. S., St. James St., Montreal 1878
Cross, Alexander, Ormstown, Q 1881
Cross, William Heber, Montreal 1882
Crothers, Robert A., B.A., Bedford, Q.. 1878
Cruikshank, William G., 60 St. James St. Montreal 1872
Cullen, James, Chateauguay, Q 1884
Curran, Joseph C 1862
Cushing, Chs., 110 St. James St. Montreal 1869
*Cushing, Lemuel, jun., M.A 1865
Daly, J. C 1858
Dansereau, Arthur, Montreal 1865
Dansereau, Clement, 62 St. Hubert St., Montreal 1877
Darby, Daniel, Waterloo 1870
Darey, Pierre J., M.A., Montreal 1868
David, Alphonse, 186½ Notre Dame St., Montreal 1872
Davidson, Charles P., M.A., 182 St James St., Montreal 1863
Davidson, Leonidas Heber, M.A., 217 St. James St., Montreal 1864
Day, Edmund T., 192 Notre Dame St. Montreal 1863
De Beaumont, Alfred L., Montreal 1880
Decary, Alderic, 188 St. Denis St., Montreal 1879
Demers, Jean Baptiste, Montreal 1883
De Martigny, Charles L., Montreal 1880
De Martigny, Alphonse L., Varennes, Q. 1881
Desaulniers, Alexis L 1861
Desaulniers, Henri Lesieur, Montreal 1864
Desaulniers, Dionis, 223 Notre Dame St. Montreal 1876
Desmarais, Odilon, St. Hyacinthe 1876
Des Rivieres, Rodolphe, 15 St. Vincent St., Montreal 1875
Desrochers, Jean L. B 1863
Des Rosiers, Joseph, 221 St. Lawrence St. Montreal 1873
Dickson, W. E., Montreal 1883

Doak, George O., Coaticook, Q..... 1863
‡Doherty, Charles J., 13 Hospital St., Montreal..... 1876
Doherty, Thomas J., Montreal..... 1868
Dorion, Adelard A. L., 160 Notre Dame St., Montreal..... 1862
Dorion, Louis C. W., 24 St. James St., Montreal..... 1877
Dore, Pierre J., Laprairie..... 1880
*Doutre, Gonzalve..... 1861
Doutre, Pierre..... 1858
Downie, D., Montreal..... 1880
Driscoll, Netterville H., 64 St. James St., Montreal..... 1861
*Drummond, William D..... 1867
Dubuc, Joseph, Manitoba..... 1869
Duchesnay, Henri J. T., Beauce, Q..... 1866
‡Duclos, Charles A., B.A., Montreal..... 1884
Duffy, Henry T., B.A., Sweetsburg, Q... 1878
Duhig, John T., Quebec..... 1882
Dugas, Francois O., Montreal..... 1880
Duncan, Alexander E., B.A., Montreal 1879
Dunlop, John, 102 St. Francois Xavier St. Montreal..... 1860
Duprat, Pierre N..... 1866
Durand, Nephtalie, 67 St. Sulpice St., Montreal..... 1864
Ethier, Leandre, 352½ Lagauchetiere St., Montreal..... 1879
Ethier, Marc, 25 St. Gabriel St., Montreal 1877
Fair, John, Junr., Montreal..... 1883
Falconer, Alex, B.A., Montreal..... 1884
Faribault, Joseph E., L'Assomption, Q.. 1878
Farmer, Wm. O., Montreal..... 1866
Fay, John E., Knowlton, Q..... 1878
Fisher, Roswell C., Montreal..... 1869
Fisk, John J., Coaticooke..... 1868
Fleet, Charles J., B.A., Montreal..... 1879
Foran, Thomas P..... 1870
Forget, Adelard, 64 St. Gabriel St., Montreal..... 1877
Forster, Joseph L., Montreal..... 1881
Foster, George G., Knowlton, Q..... 1881
Franks, Albert W..... 1871
*Gardiner, Wm. F..... 1856
Galarneau, Joseph Antoine..... 1864
Galbraith, William, Kingston, O..... 1875
Garon, Alphonse P..... 1882
Gaudet, Oscar, 160 Notre Dame St., Montreal..... 1878
Gauthier, Antoine N., Sault au Recollet, Q..... 1881
Gaultier, D. Z., Sorel, Q..... 1859
Gelinas, A., Manitoba..... 1876
Geoffrion, Christopher A., 48 St. James St., Montreal..... 1866
Gibb, James R., Montreal..... 1868
Gilman, Francis E., M.A., 138 St James St., Montreal..... 1865
Girard, Alfred C., Marieville..... 1882
Girouard, Desire, 56 St. Francois Xavier St., Montreal..... 1860
Glass, James M., 62 St. Francois Xavier St., Montreal..... 1877
‡Goldstein, Maxwell, Montreal..... 1876
‡Gordon, Asa, Aylmer, Q..... 1862
Gosselin, Jean, Quebec..... 1877
‡Goodhue, Henry S. W., Montreal..... 1877
Goyette, Henri A., Beauharnois, Q..... 1880
Grahame, Dugald, 1134 Dorchester St., Montreal..... 1878
‡Greenshields, James N., 102 St. Francois Xavier St., Montreal..... 1876
Guertin, Alfred L., Montreal..... 1882
Grenier, Amedee L. W..... 1863
Guerin, Edmund W. P., B.A., Montreal.. 1881
Hackett, Michael F., Stanstead, Q..... 1874
Hague, Frederick, Montreal..... 1883
Hall, John S., B.A., 131 St. James St., Montreal..... 1875
Hall, William A., 34 St. James St., Montreal..... 1863
Hammond, Henry R., Chatham..... 1180
Harnett, Wm. de Courcy, City Hall, Montreal..... 1870
Hart, Lewis A., M.A., 194 St James St., Montreal..... 1869
Hemming, Edward J., Arthabaska..... 1855
‡Hodge, David W. R., B.A., Sherbrooke, Q..... 1874
Holton, Edw., 138 St. James St. Montreal 1865
Houghton, John G. K..... 1863
Howard, Rice M., Winnipeg..... 1869
Houliston, Alexander, Three Rivers..... 1865
Hunter, Herbert S., Montreal..... 1880
Hunter, Walter, Hamilton, O..... 1883
*Huntingdon, Russ Wood..... 1875
Hutchins, Horace A., East Farnham..... 1883
‡Hutchinson, Matthew, Montreal..... 1873
Ingalls, Allen G., Granby, Q..... 1881
Jackson, Samuel W., Montreal..... 1881
Jenkins, George E..... 1874
Jodoin, Isaie..... 1858
Johnson, Edwin R., Stanstead, Q..... 1866
Joliffe, William J., Montreal..... 1882
Jones, Richard A. A., B.A., Montreal.. 1864
Joseph, Joseph O., 33 St. Gabriel St., Montreal..... 1864
Kavanagh, H. J., 117 St. Francois Xavier St., Montreal..... 1878
Keller, Francis J., New York..... 1869
*Kelly, John P..... 1862
Kemp, Edson, B.A., 235 St. James St., Montreal..... 1859
Kenny, Wm. R., Aylmer, Q..... 1865
Kirby, James, M.A., Montreal..... 1867
Kittson Geo. R. W., 60 St. James St., Montreal..... 1867
Klock, Robert A., Montreal..... 1882
Knapp, Frederick A., 17 St. John St., Montreal..... 1877
Labadie, M. T. Adolphe, Montreal..... 1874
Labadie, Y. A. Odilon, Montreal..... 1874
Lacoste, Arthur, Montreal..... 1869
Laflamme, R. G., Montreal..... 1856
Laflamme, Leopold, 42 St. James St., Montreal..... 1869
Lafleur, Eugene, B.A., Montreal..... 1880
*Lafrenaye, P. R..... 1856
Lambe, William B., 63 St. Gabriel St., Montreal..... 1850
Lanctot, Husmer, 3 Place d'Armes Hill, Montreal..... 1878
Lanctot, Mederic, 69 Upper St. Urbain St., Montreal..... 1860
Lane, C., B.A., Montreal..... 1881
Laplante, Jean Bte., St. Stanislas..... 1880
Lareau, Edmond (ad eun), Montreal..... 1874
Lariviere, Joseph..... 1874
Larose Telesphore..... 1860
Lassalle, Lucien, 6 St. James St., Montreal..... 1877
Laviolette, Pierre B., 16 St. Vincent St., Montreal..... 1878
Laurier, Wilfrid, Arthabaskaville, Q.... 1867
*Lay, Warren Amos..... 1865
Lawlor, Richard S., Aylmer, Q..... 1861
Leach, David S., Montreal..... 1861

*Leach, Robert A., M.A. 1860
Lebœuf, Louis C., 57 St. Gabriel St. Montreal 1873
Leblanc, Albert, 23 St. Denis St. Montreal 1879
Ledieu, Leon, 1 St. Pierre St., St. Henri, Montreal 1879
‡Lefebvre, Toussaint Z., Montreal 1882
Lefebvre, Frederic, 6 St. James St. Montreal 1863
Lebourveau, Steadman A., Montreal .. 1876
Leet, Seth P., 163 S,. James St. Montreal 1879
Leet, Lynn Tell, Montreal 1883
Lighthall, W. D., B.A., Montreal 1881
Lighthall, George R., Montreal 1882
Levy, J. C. E., 20 St. Louis St., Montreal 1878
Lonergan, James, 34 St. James St. Montreal 1873
Lonergan, Michael L. S., Montreal 1871
Loranger, Louis George 1863
Lyman, Albert, B.A., Montreal 1881
Lyman, Elisha Stiles 1865
Lyman, Frederick S., B.A., Montreal... 1869
‡Lynch, Wm. W., Quebec 1868
Mackenzie, Fred., Montreal 1861
Macpherson, Kenneth R., B.A., Montreal 1884
Madore, Camille, Notre Dame de Grace. 1880
‡Major, David, 61 St. Gabriel St., Montreal 1875
Major, Edward James, 403 Guy St. Montreal 1871
‡Marler, Wm. De M., B.A., 115 St. Francois Xavier St. Montreal 1872
‡Martin, John E., Stafford, Q 1883
Martineau, Paul G., 84 Champlain St. Montreal 1879
Matheson, Roderick D., Charlottetown, P.E.I. 1883
McConnell, Arthur, Montreal 1883
McCord, David Ross, M.A., 131 St. James St. Montreal 1867
McCorkill, John C. G. S., Montreal..... 1877
McCormick, Duncan L., Montreal..... 1871
McDonald, Frank H. 1873
McDonald, John S 1876
McDougall, John W. C., Three Rivers, Q 1877
McFee, Kutosoff N,, B.A., Winnipeg... 1880
*McGee, Thomas d'Arcy 1861
McGibbon, R. D., B.A., Montreal 1879
McGoun, Archibald, B.A., Montreal.... 1878
*McIntosh, John, B.A. 1868
McKenzie, Peter, S. G., Melbourne, Q.. 1883
McKercher, John, Montreal 1880
McKinnon, Edmund 1878
McLaren, John J., Toronto 1868
McLaren, John Robert, M.A., 525 Sherbrooke St. Montreal 1859
*McLaurin, John Rice 1867
McLean, B. C., 19 St Monique St., Montreal 1879
McLennan, William, Montreal 1880
McLennan, Francis, B.A., Montreal 1884
McLennan, Farquhar S., Montreal 1884
McMahon, Edward M., Montreal 1881
‡McMaster, Donald, Montreal 1871
*McNaughton, Peter J 1879
Merry, John Westley, Sherbrooke, Q.... 1870
Messier, Damase, 56 St. Gabriel St. MMontreal 1875
essier, Joseph S., St. John, Q 1868
‡Mignault, Pierre B., 36 St. Vincent St. Montreal..... 1878
Mitchell, Albert Fd., Sweetsburg, Q..... 1867
Molson, Alexander, 101 St. Francois Xavier St. Montreal 1851
*Monk, Ed. Cornwallis 1870
Monk, Frederick D., Montreal 1877
Morgan, Edward A. D., Montreal..... 1882
Morrin, Pierre A., Montreal..... 1878
Morris, Alexander, M.A, Toronto, O.... 1850
Morris, John L., 40 St. John St., Montreal 1859
Morrison, Adelard, Napierville, Q..... 1879
*Nagle, Sarsfield B 1862
‡Nicholls, Armine D., B.A., 48 Victoria St., Montreal 1879
Nichol, Thomas. M.D., LL.B., 137 Bleury St., Montreal 1875
Nutting, Charles A., Montreal 1872
Ouimet, Adolphe P., 332 Lagauchetiere St. Montreal 1861
†Oughtred, Allan R., Sheridan, O..... 1881
Painchaud, Joseph, Montreal 1880
Palliser, Joseph, 17 St. John St., Montreal 1877
Panet, Edouard A 1874
Papineau, Joseph G., 32 St. James St. Montreal 1869
Parisault, Charles Ambroise 1859
Pelletier, Louis C., 446 Mignonne St. Montreal 1877
Perras, F.X., 4 St. James St. Montreal.. 1878
Perry, Joseph, New Orleans 1869
*Perkins, John A., M.A 1860
Perodeau, Narcisse, 5 St. Therese St. Montreal 1876
Piche, Aristide 1868
Pillet, J. Henri, Court House, Montreal. 1879
*Plimsoll, Reginald J., M.A 1861
Polette, Wm. A., Montreal 1881
Poutre, Felix E., Montreal 1874
Power, Alexander W. A., Ottawa..... 1868
Prefontaine, Raymond, Montreal..... 1873
Purcell, John D., 146 St. James St. Montreal 1877
Rainville, Henri Benjamin, 43 St. Gabriel St. Montreal..... 1873
Ramsay, Robert A., M.A., Merchants' Exchange, 11 St. Sacrament St. Montreal 1866
Raynes, Charles, B.A., Montreal..... 1881
Reddy, Wm. B. S., Montreal..... 1880
*Redpath, Wm. W., B.A. 1881
Ricard, Damase F. J..... 1859
Rielle, Norman T., B.A., Montreal..... 1884
Richard, Emery Edward, Battleford, N.W.T. 1867
Richard, Edward E..... 1868
Ritchie, Wm. F., B.A., Montreal..... 1879
Rixford, Em. Hawkins, San Francisco, Cal..... 1865
Robertson, David E., Lennoxville, Q.... 1883
Robidoux, J. Emery, Montreal..... 1866
Robillard, Emile 1874
Rochon, Charles A., 212 Notre Dame St. Montreal 1861
Rogers, John Henry, B.A., Montreal.... 1884
Rose, William, London, England..... 1866
Ross, Walter Lord, 11 Hospital St. Montreal 1879
Rutherford, Alex. C., Woodstock, O.... 1881
Sabourin, Ernest 1863
Santoire, Camille, Montreal 1863
Sarasin, Ferdinand, Leon, 16 St. Vincent St., Montreal 1871
Scallon, Wm., Montreal 1876
Sexton, James Ponsonby, 59 St. Francois Xavier St. Montreal..... 1860

Sharp, W. Prescott 1880
Short, Robert, Richmond, P.Q. 1867
Sjostrom, Paul R. D., Sherbrooke, Q .. 1881
Smith, Robert C., Montreal 1881
Shortiss, James, Three Rivers, Q. 1881
Sieotte, Victor B., Cadastre Office, Montreal 1862
Snowdon, H. L., 67 St. Francois Xavier St. Montreal 1856
Spong, John J. R., Montreal 1874
St. Jean, Edmond R., Montreal 1879
Stephens, Charles Henry, Montreal 1875
Stephens, George W., Montreal 1863
Stephens, Romeo H., 56 St. Francois Xavier St. Montreal 1850
Stephens, Charles O 1864
Tache, Pascal, Montreal 1876
Tait, Melbourne, Montreal 1862
Taschereau, Arthur, Quebec 1864
Taylor, A. Dunbar, B.A., Montreal 1878
Taylor, Reid, Montreal 1869
Terrill, Joseph Lee, Stanstead, Q. 1865
Torrance, Fred. W., M.A., Montreal 1856
‡Trenholme, Norman W., M.A., Montreal 1865
Trenholme, Edward H., M.D., Montreal 1865
Trudel, Bouthillier J., 75 Dubord St. Montreal 1879
Vandal, Philippe, 58 St. Francois Xavier St. Montreal 1861
Vilbon, Chs. A., 44 St. James St. Montreal 1863
Walker, Wm. S., 112 St. Francois Xavier St. Montreal 1874
*Walsh, Thomas Joseph 1860
Watts, Wm. J., B.A., Drummondville, P.Q. 1869
Weir, Robert S., Montreal 1880
Weir, Wm. A., Montreal 1881
Weir, Frank, Montreal 1882
*Welsh, Alfred 1864
White, Wm. J., Montreal 1882
Wicksteed, Richard M., M.A., Ottawa 1868
Wight, James H 1868
Wood, Franc Ogilvie, Montreal 1870
Wotherspoon, Ivan T. (Laval), [ad eun] Montreal 1868
Wright, Wm. Mackay, B. A., Hull 1863
Wurtele, Charles J. C., Sorel, P.Q 1863
Wurtele, Jonathan S. C., Montreal 1870

*Deceased. ‡ Elizabeth Torrance Medallists.

BACHELORS OF ARTS.

Allan, James G. († **E**), Brooklyn, N.Y.. 1873
Allan, John (**N**), Leeds, Q. 1874
Allen, Frank A., Huntingdon, Q. 1880
Allworth, John 1872
Amaron, Calvin E. (**P**2), Three Rivers, Q. 1877
Ami, Henry Mark, Ottawa, O. 1882
Anderson, Jacob de Witt, (†**C**) 1866
Anderson, James A., Montreal 1877
Archibald, John Sprott (†**P**), Montreal .. 1867
Atwater, Albert W., Montreal 1877
Aylen, Peter, B.C.L., Aylmer, O. 1850
Bancroft, Rev. Chas., junior, M.A., Knowlton, Q. 1866
Barlow, Alfred E. (**N**), Montreal 1883
Barnston, Alexander, (†) 1857
Barron, Thomas J., Lachute, Q. 1882
Bayne, George D., Morrisburg, O. 1880
Baynes, Donald, London, Eng 1864
Beckett, William Henry 1866
Bennett, James, Montreal 1880
Bethune, Meredith Blenkarne († **N**), Montreal 1866
Black, Chs., Granby, Q. 1881
Black, James R. 1874
Blackader, Alex. D. (**N**) Montreal 1870
Blackader, Edward H., Montreal 1884
Blakely, Malcolm D., Mont eal 1878
Bland, Salem G. (Morrin), Montreal 1877
Bland, Charles E. († **C**), Montreal 1883
Bockus, Charles E. 1852
*Bothwell, John A. († **N**) 1864
Boyd, John (**N** 2) 1861
Bracq, John C. (**P** 2), Grand Ligne, Q.. 1881
Brewster, Wm. (†**C**) 1865
Brooks, Charles H. († **N**), Smyrna 1868
Browne, Artnur Adderley (†**E**),Montreal. 1866
Brown, Thomas 1853
Brown, A. J. (†) Morrin, Windsor Mills, Q. 1883
Bull, Harcourt J. († **P**), Montreal 1880
Bullock, Wm. E. († **C**) Millbrook, O. 1860
Cameron, James, M.A. († **M**), Milbrook, O 1871
Cameron, John D., († **P**), Dewitville, Q. 1883
Cameron, Kenneth (†**N**), Montreal 1884
Carmichael, James, Markham, G. 1867
Cassels, Hamilton, (Morrin), Millichamp's Building, Adelaide St. Toronto 1873
Cassels, Robert, (Morrin) (**P**), Ottawa... 1866
Chandler, George H. († **M**) 32 Lorne av. Montreal 1875
Chipman, Clarence, Prescott. O. 1866
Chubb, Sydney C. (**N** 2), Brooklyn, N.Y. 1877
Christie, John H., Lachute 1872
Christie, William, Lachute, Q. 1884
Clark, Waliace, († **E**) 1869
*Cline, John D. († **C**) 1871
Clowe, John D 1863
Cockfield, Henry, Montreal 1882
Cook, Archibald H. (Morrin), Quebec... 1869
Cornish, Rev. Geo., B.A., London Univ. (ad eun), Montreal 1856
Cox, Jacob W., Noel, Hants Co., N.S... 1876
Craig, James A. (**P 2**), Fitzroy, O. 1880
Craig, James, Renfrew, O. 1874
Cross, Alexander S., († **P**), Montreal.... 1879
Crothers, W. J., (**P 2**), Phillipsburg, Q. 1872
Crothers, Robt. A., († **C**), Bedford, Q... 1876
Coussirat, Rev. Adrian D. (ad eun)Montreal 1871
Cunningham, Thomas E., (**P 2**), Montreal 1880
Currie, Dougald, (**E**), Crinan, O. 1880
*Cushing, Lemuel, (**C**) 1863
Darey, J. Herbert, († **C**), Montreal 1880
Dart, William J., Laprairie 1868
Davidson, Charles Peers, Montreal 1863
Davidson, Rev. Jas., (ad eun), Montreal. 1863
Davidson, Leonidas Heber, Montreal..... 1863

Dawson, William B., († N), Montreal.... 1874
Dawson, Rankine, (P 2), Montreal.... 1878
Dewey, Finlay McN., (P 2), Richmond, Q..... 1874
Dey, William J., († N), Montreal..... 1871
DeWitt, Caleb S., Lockport, Ill., U.S.... 1861
Dickson, James C., Montreal..... 1883
Dixon, Wellington, († E), Montreal..... 1883
Donald, James T., († N), Montreal..... 1878
Dougall, Duncan, Windsor, Ont..... 1860
Dougall, John Redpath, Montreal..... 1860
Drummond, Chas. G. B., (N), Montreal.. 1862
Duclos, Charles A., (Morrin), Quebec.... 1881
Duff, Archibald, († M), Airedale College, Yorkshire, Eng..... 1864
Duffett, Henry J., Megantic, Q..... 1883
Duffey, Henry T., (E 2), Bedford..... 1876
Duncan, Alexander E., Montreal..... 1867
Eadie, Robert, († C), Oakland, O..... 1879
Elder, John, († P), Huntingdon, Q..... 1881
Ells, Robert, († N), Ottawa..... 1872
Empson, John, 71 University St., Montreal..... 1874
England, Luther M., (N), Knowlton, Q.. 1883
Ewing, William, Winnipeg, Manitoba... 1878
Fairbairn, Thomas, (P 2)..... 1863
Falconer, Alex., († E), Montreal..... 1881
Ferguson, James D., (Morrin), Quebec... 1880
Ferguson, John S., Montreal..... 1861
Ferguson, Wm. A., († M), Richibucto, N.B..... 1881
*Ferrier, Robert W..... 1857
Fessenden, Elisha Jos., Chippawa, O.... 1863
Fleet, Charles J., (E), Montreal..... 1872
Forneret, Geo. A., Dunham Flats..... 1877
Fortin, Rev. Octave, (ad eun), Winnipeg, Man..... 1867
Fowler, William, (N)..... 1865
Fowler, Elbert..... 1868
Fraser, John, (Morrin)..... 1869
Fraser, William, Dundee, Q..... 1883
Gamble, Robt., Billings Bridge, Ont..... 1881
Gerrie, Andrew W., Fergus, O..... 1884
Gibb, Charles, Montreal..... 1865
Gilman, Francis Edward, Montreal..... 1862
Gore, Frederick..... 1861
Gould, Charles H., († C), Montreal..... 1877
Gould, Edwin, Montreal..... 1856
Graham, John, († E), Williamstown, O.. 1876
Graham, John H., Ormstown, Que..... 1878
Grandy, John, Milbrook, Ont..... 1866
Gray, William, Union Theological Sem., New York..... 1876
Greenshields, Edward, († P), 305 Peel St., Montreal..... 1869
Greenshields, Samuel, Montreal..... 1874
Greenshields, Robert A., (†), Danville, Q..... 1883
Green, Joseph, († C), 600 West 5th St., Cincinnati, Ohio, U.S..... 1861
Green, Lonsdale, 118 Leadenhall St., London, E. C., Eng..... 1864
Gregor, Leigh R., (P 2), Montreal..... 1882
Guerin, Edmund W.P., († E), 102 St. Francois Xavier St., Montreal..... 1878
Guignard, J. A., B.A., (Un. Fr.) ad eun, Ottawa..... 1883
Hague, Henry J., († C), Montreal..... 1882
Hall, John S., Montreal..... 1874
Hall, Rev. William, 30 Fort St. Montreal..... 1861
Hart, Lewis A., Montreal..... 1866
Harrington, Bernard J., († N), Montreal . 1869
Harvey, Alfred, St. John's, Newfound.... 1874
Harvey, Charles J., St. John's, Newfoundland..... 1874
Haythorne, Thos., Charlottetown, P.E.I.. 1884
Hemming, Henry, (Morrin), Quebec..... 1880
*Hicks, Frank W..... 1864
Hindley, John, Montreal..... 1868
Hodge, D. W. R., († E), Sherbrooke, Q. 1872
Holiday, Caleb S., Lachute, Q..... 1870
Howard, Robt., J. B. († N), Montreal.... 1879
Hunter, Walter, B.C.L., Hamilton, O.... 1883
Jones, Montgomery, (E), Hatley, Q..... 1869
Johnston, Rev. Jas. A., († P), Rutland, Vermont..... 1870
Joseph, Montefiore, (N), Quebec..... 1870
Kahler, Frederick A., († C), Germantown, Phil., U.S..... 1869
Keays, Charles H., Hamilton, Ont..... 1880
Kelley, Frederick W. († E), Montreal.... 1871
Kemp, Edson, Montreal..... 1859
Kennedy, Geo. T. (N)..... 1868
Kennedy, Robt. Alex., Ottawa. O..... 1884
*Kershaw, Philip G..... 1867
Kinnear, George, Megantic, Q..... 1883
Kirkpatrick, Robert C., Montreal..... 1884
Kirby, James (†), Montreal..... 1859
Klock, Robert A., Aylmer, P.Q..... 1880
Krans, Edward H. († E), New York..... 1865
Lafleur, Eugene († P), Montreal..... 1877
Lafleur, Paul T. († E), Ottawa..... 1880
Lafleur, Henri A. († N), Montreal..... 1882
Laing, Robert († P), Halifax, N.S..... 1868
Lane, Campbell, 293 Peel St., Montreal.. 1879
Lariviere, Vitalian, Roxton Falls, Q..... 1880
Lariviere, Dolard, Roxton Falls, Q..... 1884
*Leach, Robert A..... 1857
Lee, Arch. (C), Pendleton, O..... 1883
*Lewis, Albert R. (E)..... 1869
Lighthall, William D. († E), Montreal... 1879
Lyman, A. Clarence, Montreal..... 1878
Lyman, Henry H. († N), Montreal..... 1876
Lyman, Frederick Stiles, Montreal..... 1863
Lyman, Walter E. († M L 2), Montreal... 1881
Mabon, James († P), St. Louis de Gonzague, Q..... 1884
Mackay, Adams A. († M), River John, Pictou Co., N.S..... 1884
Mackie, John F. (†), Morrin, Point Levi, Q..... 1883
Major, George W., 1398 St. Catherine St., Montreal..... 1870
Marceau, James..... 1884
Marler, Wm. de M. († M), Montreal.... 1868
Martin, Alfred W. Montreal..... 1882
Mason, James L..... 1859
Masse, Godefroi (†) Grand Ligne, Q..... 1884
Matheson, John, Presbyterian College, Montreal..... 1876
Mattice, Corydon J., Cornwall, O..... 1859
Maxwell, John (N), L'Orignal, O..... 1879
McClure, Wm. († N), Oshawa, O..... 1879
McConnell, Richard G. (N), Montreal.... 1879
McCord, David Ross, Montreal..... 1863
McDonald, Hector C., Flat River, P.E.I. 1881
MacDonnell, Richard L. († C), Montreal. 1873
MacDuff, Alexander Ramsay..... 1866
MacKay, Daniel, Pictou, N.S..... 1882
McFadyen, Allan L., Montreal..... 1878
McFee, Kutusoff N. († P), Winnipeg, Man..... 1874
McGibbon, Robert D., Montreal..... 1877
McGoun, Archibald († P), Montreal..... 1876
McGregor, Archibald F., Listowell, O... 1877

McGregor, James (C), Montreal..... 1864
McGregor, Duncan, Guelph, O..... 1771
*McIntosh, John († M)..... 1870
McIntyre, Hector A., Manilla, O..... 1881
McKenzie, John, (Morrin) 1867
*McKenzie, Robert (P)..... 1869
McKenzie, Wm. A. (C), Lanark, O..... 1881
McKibbin, William M., Edwardsburg, O. 1875
McKibbin, Robert, Edwardsburg, O..... 1879
McKillop, Roland, Inverness, Q..... 1878
McKillop, Peter C., Inverness, Q..... 1882
McLaren, David C., Montreal..... 1878
McLaren, John R., 525 Sherbrooke St., Montreal..... 1856
McLaren, Harry (†) 67 Mansfield St., Montreal 1858
McLean, Neil W. (Morrin) (P2)..... 1869
McLean, Bredalbane S., Montreal..... 1869
McLennan, Duncan H., Alexandria, O.. 1871
McLennan, John S. (P), Montreal..... 1874
McLeod, Arch., Orwell, P.E.I..... 1881
McLeod, Duncan C. († M), Charlottetown, P.E.I..... 1873
*McLeod, Hugh..... 1866
McLeod, Findlay J., Winnipeg, Man.... 1872
McLeod, Norman (Morrin) Brompton Gore, Q..... 1883
McNabb, Robt., Woodville, O..... 1881
*McOuat, Walter (N)..... 1865
Macpherson, Kenneth R. († N), Montreal 1881
Mercer, Walter D., Montreal..... 1880
Merritt, David, Prescott..... 1863
Molson, Charles A. († N), Montreal..... 1880
Moore, Francis X..... 1868
Morin, Jos. L. († ML), Three Rivers, Mass, U.S 1882
Morris, William, Montreal..... 1859
Morris, Alexander, Toronto, O..... 1849
Morrison, John..... 1866
Morrison, James D. († N), Ogdensburg, N.Y..... 1865
Morrison, David W. (E), Ormstown, Q.. 1870
Muir, Andrew C., N. Georgetown, Q.... 1880
Muir, John F..... 1864
*Muir, Rev. E. P. (ad eun)..... 1865
Munroe, Gustavus, Embro, O..... 1871
Munro, Murdoch, Williamstown, L'Original..... 1872
*Murray, Charles H. († N) 1873
Murray, J. Ralph († M), Montreal..... 1883
Naylor, W. H. († P), Clarendon, Q..... 1872
Newnham, Jarvois A., Montreal 1878
O'Halloran, G. F., Cowansville, Q..... 1883
Ogilvie, Archibald N., Georgetown, Q... 1880
Oliver, Theophilus H. (Morrin) (P2).... 1866
Parent, Manasseh B. (†), St. Pie, Q..... 1884
Parsons, Simeon H., B.A., New Brunswick (ad eun), Montreal 1881
Pease, George H. († C), 120 Broadway, New York..... 1864
Pedley, Hugh, Cobourg, O..... 1875
Pedley, Charles S. (P), Port Perry, O... 1878
Pedley, James W., Cobourg, O..... 1884
Perrigo, James (N), Montreal..... 1866
*Perkins, John A..... 1858
Petit, Rev. Charles B 1850
Phillips, Charles W..... 1852
Pillsbury, Carrol E., Augusta, Me., U.S. 1880
*Plimsoll, Reginald J..... 1858
Porter, Jas. A. († N), Kemptville, O.... 1883
Pritchard, John C. (Morrin), Quebec.... 1881
Ramsay, R., Anstruther, B.C.L. († N), Montreal..... 1862
Raynes, Charles, Montreal..... 1880
*Redpath, George D., Montreal..... 1857
*Redpath, William W..... 1879
Reddy, Herbert L. (E)..... 1873
Reid, James (P 2), North Mountain, O.. 1881
Rexford, Elson J. (P), Quebec..... 1876
Rielle, Norman T. († E), Montreal..... 1882
Richardson, A. W., Montreal..... 1883
Ritchie, Arthur F. (C) St. Paul, Minn. 1873
Ritchie, Wm. F. († C), 660 Sherbrooke St., Montreal, ... 1875
*Roberts, George F. (P 2), ... 1880
Robertson, Alex. († N), 1100 Dorchester St., Montreal..... 1870
Robertson, Geo., Garafraxa, O..... 1881
*Robertson, Robert (P)..... 1877
Robins, Sampson Paul († M), Montreal 1863
Rogers, George (N 2), Lakefield, Q..... 1884
Rogers, J. H. († P), Huntingdon, Q..... 1882
Rondeau, Samuel, St. Elizabeth, Q 1884
Ross, George († C), Montreal..... 1862
Ross, James († P), Huntingdon, Q..... 1878
Ross, James († P), Huntingdon, Q..... 1883
Ross, L. F., Montreal..... 1883
Ross, J. T. (†) (Morrin), Quebec..... 1869
Russell, Henry (Morrin)..... 1881
Rutherford, Alex., B.C.L., Ormond, O.. 1881
Scott, Henry C. (Morrin) (P), Montreal..... 1866
Scott, Matthew H. († N), Bristol, Q..... 1877
Scrimger, Alex. (†), Galt, O..... 1883
Scriver, Charles W., Hemmingford, Q .. 1880
Shearer, W. K., Athelstan, O..... 1883
Sherrill, Alvan F. († N), Omaha, Nebraska, U.S..... 1864
Slack, George, Montreal 1868
Smith, Arthur W. (N), Lachine, Q..... 1882
Stethem, George T..... 1859
Stevens, William H., St. Johns, Q..... 1879
Stevenson, Samuel C., Montreal..... 1874
Stevenson, Rev. J. F., B.A., London Univ. (ad eun), Montreal 1876
Stewart, Robert, Lachute, Q..... 1882
*Stewart; Colin Campbell († N)..... 1867
Stewart, William S. († C), Charlottetown, P.E.I 1878
Stirling, Robt., Montreal..... 1882
Stuart, Gustavus G. († P), Quebec..... 1875
Sweeney, James F., Franklin, Q..... 1878
Tabb, Silas Everett (N), Sherbrooke, Q.. 1866
Taylor, Archibald D. (C), Montreal..... 1874
Taylor, Edward T., Peshawa, Bengal, India 1878
Taylor, Ernest M , Stanstead, Q..... 1875
Thomas. Henry W. († E), Montreal..... 1874
Thomas, F. Wolferstan G., Montreal.... 1882
Thornton, Rev. R. McA., Toronto (ad eun), London, England 1872
Thornton. Hastwell W. (N), New Richmond, Q..... 1878
Torrance, Edward F. (P Q), Peterboro, O 1871
Torrance, Frederick W., Brandon, Man.. 1878
Torrance, John Fraser, Montreal..... 1872
Trenholme, Norman Wm. († P), Montreal..... 1868
Trenholme, Chas. W. (N), Montreal..... 1882
Tucker, Jno. W. († C), Montreal 1881
Tunstall, Simon J. (E), Montreal..... 1873
Tupper, James S. (N), Winnipeg, Man .. 1871
Turner, Walter H. († E), Montreal..... 1884
Unsworth, Joseph K. († E), Georgetown, Q 1884
Walker, John (Morrin), Quebec..... 1880
Walker, Thomas..... 1860
Walker, George F., Waddington, N.Y., U.S..... 1882

Wallace, Robt. W. (**P**), London, O..... 1872
Ward, George B. († **C**)..... 1874
Warriner, Rev. William H. († **E**), Yorkville, O..... 1877
*Watson, Alindus J..... 1876
Watts, Wm. John (**C**), Drummondville, Q..... 1866
Weeks, Wm. A., Charlottetown, P.E.I... 1881
Wellwood, James, Minnedosa, Man..... 1878
Whillans, George (**P 2**), Ottawa..... 1872
Whillans, Robert, Ottawa..... 1872
White, William, Montreal..... 1881
Wicksteed, Richard M. (**C**), Ottawa..... 1863
Wilson, John (**P**)..... 1866
Wood, Frank O., Montreal..... 1869
Wood, Thomas F., Montreal..... 1869
Wood, Holton H., 764 Sherbrooke St., Montreal..... 1879
Wotherspoon, Ivan T., (Morrin) (**P**), Montreal..... 1866
Wright, George C., Hull, Q..... 1884
Wright, Wm. McKay, Ottawa..... 1861

BACHELORS OF APPLIED SCIENCE.

In Civil and Mechanical Engineering.

Archibald, Hy. A., Montreal..... 1881
Batcheller, Alvan A., Bedford, Q..... 1875
Bell, Robt. (**N**), M.D., Geological Survey, Ottawa..... 1861
Boswell, St. George J., Assistant Engineer Harbour Improvements, Quebec. 1874
Boulden, Charles M., Millersburg, Ky., U.S..... 1878
Brodie, Robert J., Smith's Falls, O..... 1873
Chipman, Willis (**N**), Brockville, O..... 1876
Collins, John J., Manotick, O..... 1882
Davis, Allan R., Adolphustown, O..... 1884
Dawson, Wm. B., B.A., Montreal..... 1875
Dowling, Donaldson Bogart (‡), Napanee, O..... 1883
Drummond, J., Manitoba..... 1882
Dudderidge, James, Lachute, Q..... 1880
Forlong, Gordon, Lachute, Q..... 1884
Foster, Philip L., Longueuil, Q..... 1882
*Frothingham, John J..... 1875
Graham, Wm., Montreal..... 1884
Green, Thomas D., Dominion Lands Office, Ottawa..... 1882
Harvey, Chas. J., B.A., St. John's, Newfoundland..... 1874
Hawley, David F., Aird, Q..... 1876
Hetherington, Frederick, Quebec..... 1876
Hall, Richard, Trenton, O..... 1878
Hill, Arthur E., Sydney, C.B..... 1875
Hislop, John L., C. P. Railway..... 1884
Jones, Thos. H., Bradford, O..... 1877
Kennedy, George T., M.A..... 1873
McDonald, John, C. P. Ry..... 1884
McEvoy, Jas., Ottawa, O..... 1883
McKenzie, John M., Stellarton, Pictou, N.S..... 1884
McLeod, Clement H., Montreal..... 1873
McLean, Alexander J., Canada Pacfiic Railway..... 1874
McMillan David E., Montreal..... 1884
Miller, Frederick F. (‡), Napanee, O..... 1882
Moffatt, Jas. W., Montreal..... 1884
O'Dwyer, John S. (‡), Dominion Lands Survey..... 1880
Ogilvy, David, C. P. Ry..... 1884
Page, John, Lachine, Canada Pacific Ry. 1875
Richard, Louis Napoleon, Ottawa..... 1881
Robertson, George S., Canada Pacific Railway..... 1874
Rogers, Richard B., Ashburnham, O..... 1877
Ross, George, Toronto, O..... 1875
Ross, Philip D., Mail Newspaper, Toronto 1878
Skaife, Wilfred T., Montreal..... 1880
Smith, Richard F., Montreal..... 1883
Smith, Cecil Brunswick ( ), Winona, O. 1884
Sproule, Wm. J., Harbor W'ks, Montreal 1877
Stewart, D.A., C. P. Ry, Red Rock, L.S. 1873
Swan, John, Windsor St., Montreal..... 1878
Thompson, Wm. T. (**N**), Cannington, Ont..... 1877
Waddell, Robert Wm., Cobourg, O..... 1881
Waddell, J. A. L., C.E. of the Rensselaer Polytechnic Institute of Troy, N.Y. (ad eundem), Japan..... 1882
Walbank, Wililam McL., Union Av., Montreal..... 1877
Wardrop, Norval, Brockville, O..... 1877
Wicksteed, Henry K., Ottawa..... 1873
Wilson, Robert A., Winnipeg, Man..... 1875

In Mining and Assaying.

Howard, William H. (**N**), St. Andrews, Q..... 1883
Low, Albert P. (**N**), Ottawa, Q..... 1882
Robert, Joseph A., Beauharnois, Q..... 1884
Robertson, William F. (**N 2**), Montreal.. 1880
Rogers, Richard B., Ashburnham, O..... 1878
Spencer, Joseph Wm. (**N**), University of Missouri, U.S..... 1874
Torrance, John Fraser, B.A. (**N**)..... 1873
Wicksteed, Henry K..... 1874
Wilkins, Dan. F. H., B.A., (Tor) (**N**), Mount Forrest, O..... 1875

In Practical Chemistry.

Adams, Frank (**N**), Geological Survey, Ottawa..... 1878
Burland, Jeffrey H. (**N 2**), Montreal..... 1882
Hamilton, Edward H. (**N 2**), Montreal..... 1884

GRADUATES IN CIVIL ENGINEERING

Barnston, Alexander, B.A..... 1859
Crawford, Robert..... 1859
Doupe, Joseph, Winnipeg, Man..... 1861
Edwards, George..... 1863
Frost, Geo. H., Tribune Building, N. Y . 1860
Gaviller, Maurice..... 1863
*Gooding, Oliver 1858
Gould, James H 1862
Kirby, Charles H., 58 Crescent St. Montreal..... 1860
McLennan, Christopher..... 1859
Reid, John Lestock, Prince Albert, Man. 1863
Rixford, Gulian Pickering 1864
Ross. Arthur..... 1860
*Savage, Joseph..... 1860
Walker, Thomas, B.A..... 1860

[C] First Rank Honours in Classics.
[E] do do do in English Literature, etc.
[M] do do do in Mathematics and Physics.
[N] do do do in Natural Science.
[P] do do do in Mental and Moral Philosophy.
[ML] do do do in Modern Languages.

[C2] Second Rank do.
[E2] do do
[M2] do do
[N2] do do
[P2] do do
[ML2] do do

† Indicates the Gold Medallist for the subject denoted by the letter to which it is prefixed ; or, if standing alone, for best general standing. For the titles of the Gold Medals assigned to the several subjects since 1864, see § VI, of Faculty of Arts.

In 1857, 1858, 1859, the Chapman Medal was awarded for the best general standing ; 1860, 1861, 1862, for Classics ; 1863 for Mental and Moral Philosophy ; 1864 for Natural Science

In 1862 the Prince of Wales Medal was awarded for Natural Science ; 1863 for Mathematics and Physics ; 1864 for Classics.

‡ Medal for highest Standing in Examinations for Bachelor of Applied Science. For titles of Medals, see Announcement of Faculty of Applied Science.

*Deceased.

NOTE.—The Registrar of the University will be grateful for any corrections or additions to the addresses given in the above lists ; and also for communication of titles which graduates may have acquired since their graduation.

Students of the University.

SESSION 1883–84.

McGILL COLLEGE.

FACULTY OF LAW.

FIRST YEAR.

Brown, A. J.,	Quebec, Q	Mackie, J.,	Quebec, Q
Bryson, A. P.,	Montreal, Q	Murray, J. R.,	Montreal, Q
Elliott, R. J.,	Quio, Q	Polette, L. T.,	Three Rivers, Q

SECOND YEAR.

Claxton, A. G. B.,	Montreal, Q	Hague, H. J.,	Montreal, Q
Cameron,	Huntingdon, Q	Jolly, J. G.,	Rockburn, Q
Cooke, G. F.,	Drummondville, Q	O'Halloran, G. F.,	Cowansville, Q
Duffett, H. J.,	Megantic, Q	Smith, A. W.,	Montreal, Q
Greenshields, R. A. E.,	Danville, Q		

THIRD YEAR.

Buchan, J. S.,	St. Andrews, Q	McLennan, F.,	Montreal, Q
Baril, J.,	Montreal, Q	McLennan, F. S.,	Montreal, Q
Cullen, J.,	Chateauguay, Q	Rogers, J. H.,	Montreal, Q
Duclos, C. A.,	Montreal, Q	Rielle, N. T.,	Montreal, Q
Falconer, A.,	Montreal, Q	Struthers, J. E.,	Phillipsburg, Q
McPherson, K. R.,	Montreal, Q		

FACULTY OF MEDICINE.

Aborn, W. H.,	Goderich, O	Blackader, E. H. P.,	Montreal, Q
Addison, J. L.,	Sheffield, O	Boone, T. W.,	Fredericton, N. B
Allan, J. H. B.,	Montreal, Q	Boyd, Jay,	Vankleek Hill, O
Armitage, J. H.,	Newmarket, O	Boggs, G. W.,	Wolfville, N.S
Arthur, R. H.,	Brighton, O	Bowen, Wm.,	Quebec, Q
Aylen, P.,	Aylmer, O	Brown, W. D.,	Charlottetown, P E I
Aylen, James,	Aylmer, Q	Brunette, Jas. T.,	Cornwall, O
Awde, Jas.,	Montreal, Q	Burrow, Fred. N.,	Quebec, Q
Baird, Thos. D.,	Chesterfield, O	Cameron, Duncan A.,	Strathroy, O
Barrett, J. A.,	Fenaghvale, O	Cameron, John J.,	Lancaster, O
Berry, J. A.,	Seeley's Bay, Leeds, O	Cameron, Kenneth,	Montreal, Q
Birkett, H. S.,	Hamilton, O	Campbell, A. W.,	Montreal, Q

Cassidy, G. A., Goldstone, O
Carter, Lucius, H. Picton, O
Cattanach, W. C., Dalhousie Mills, O
Christie, Wm., Lachute, Q
Church, J. R., Aylmer, Q
Clayton, W., Fredericton, N. B
Clarke, H. J., Pembina, Dacotah
Clarke, John L., Waterloo, Q
Cook, Sheldon E., Aultsville, O
Corsan, Douglas, Woodstock, O
Cowie, A. Macdonald, Montreal, O
Craig, M. A., Glen Water, O
Crocket, W. C., Fredericton, N. B
Cunningham, H. C., Kingston, O
Daly, E. A., Napanee, O
Daly, W. S., Ogdensburg, N. Y
Darey. J. H., Montreal, Q
Davies, J. B., New Edinburgh, O
Davis, A. H., Glen Buell, O
Dazé, Henri, Montreal, Q
De Cow, D. McG., Dresden, O
Dickson, J. A., Trenholmville, Q
Donald, W. McJ., Norwick, O
Doherty W. W., Kingston, N. B
Duffett, J. L., Leeds, Q
Duncan, John A., Duncansville, O
Earl, E. H., Port Hope, O
Easton, Chas. L., Easton's Corners, O
Eberts, D. W., Chatham, O
Edgar, Chas. J., Napierville, Q
Elder, John, Huntingdon, Q
Elderkin, E. J., Apple River, N. S
Ellis, W. E., St. Catherines, O
Evans, E. J., Seaforth, O
Fairbanks, C. S. B., Oshawa, O
Ferguson, J. A., Vankleek Hill, O
Ferguson, W. A., Richibucto, N. B
Ferguson, W. D., Cumberland, O
Finley, F. Gault, Montreal, Q
Fillmore, E. W., Baie Verte, N. B
Flagg, J. D., Morrisburg, O
Flett, Alfred J., Lower Fort Garry, Man
Fraser, J. M., Hawkesbury, O
Gairdner, Thos. M., Bayfield, O
Gardner, Alex. W., Cornwall, O
Gentles, John, Montreal, Q
Giles, Edmond, Farmersville, O
Gibson, J. B., Cowansville, Q
Gladman, G. J., Lindsay, O
Gooding, Chas. E., Barbadoes, W. I
Graham, John, Ottawa, O
Graham, Geo. A., Hamilton, O
Grant, G. C. J. Kingston, Jamaica
Grant, J. H. Y. Ottawa, O
Grant, Andrew S., Quebec, Q
Gray, Jas. E., Coldstream, O
Groves, Wesley, Carp, O
Gustin, Smith, London, O
Haentschel, W.C., Pembroke, O

Hall, A. G., Franklin Centre, Q
Hall, Wm., Walkerton, O
Hallett, E. A., Truro, N. S
Hamer, A. L., Bradford, O
Hanna, Alb. E., Harlem, O
Harkin, Fred. McD., Vankleek Hill, O
Harte, Jas. H. M., Montreal, Q
Haythorne, T. J., Charlottetown, P. E. I
Hill, J. Edgar, Montreal, Q
Holden, E. D. F., St. Armand Centre, Q
Howey, Arthur Lee, Eden, O
Hughes, P. H., Strathroy, O
Hardman, H. T., Aylmer, Q
Hutchison, James A., Goderich, O
Ibbottson, John S., Montreal, Q
Irvine, Robert T., Carp, O
Johnson, C. H., Almonte, O
Johnson, H. D., Charlottetown, P. E. I
Johnson, J. W., Farmersville, O
Johnston, W. G., Sherbrooke, Q
Johnstone, H. Y., Montreal, Q
Jolliffe, Jas. H., Cincinnati, Ohio
Kelly, J. A. A., Durham, O
Kelly, Patrick N., Rochester, Minn
Kennedy, R. A., Ottawa, O
Kinloch, J. A., Montreal, Q
Kirkpatrick, R. C., Montreal, Q
Klock, Wm. H., Aylmer, O
Lafleur, H. A., Montreal, Q
Landor, T. H., London, O
Loucks, W. F., Sterling, O
MacDonald, H. J., Alexandria, O
Mackay, Eugène, Papineauville, Q
Macleeve, Nassau, W. I
Macdonald, A. D., Queen's Co., N. B
Mackay, Jas. M., River John, N. S
Mackay, Eugene, Papineauville, Q
Mackinnon, Hugh, Alexandria, O
MacLean, Isaac M., Pictou, N. S
McArthur, John A., Lobo, O
McCormack, Norman, Pembroke, O
McCallum, Ed. P., Duart, O
McClure, Wm., Lachute, Q
McCuaig, W. J., Vankleek Hill, O
McDonald, H. J., Alexandria, O
McDonald, D. D. North Lancaster, O
McGannon, M. C., Prescott, O
McGannon, Thos. G., Prescott, O
McGregor, James G., Martintown, O
McInerney, James P., Kingston, N B
McKay, James, Ottawa, O
McKenzie, J. T., Plainfield, O
McLellan, James H., Summerside, P.E.I
McMeekin, J. W., St. Catharines, O
McMillan, Duncan L., Alexandria, O
McPherson, Drummond T., Lancaster, O
Madge, Walter W., Montreal, Q
Martin, Ambrose H., Peterboro', O
Mattice, James S., Messina, N. Y

Meahan, John C.,	Bathurst, N. B
Merritt, D. P.,	Fitzroy Harbour, O
Morgan, Vincent H.,	Aultsville, O
Nelson, W. M.,	Montreal, Q
Norman, T. J.,	Schomberg, O
O'Brien, Timothy,	Brudenell, O
Orton, Thos. H.,	Hamilton, O
Osborne, Alex. B.,	Hamilton, O
Owens, John G.,	Fredericton, N. B
Palmer, Guy F.,	Ottawa, O
Park, James,	Newcastle, N. B
Parker, W. D.,	Hawkesbury, O
Platt, Alfred T.,	Picton, O
Pomeroy, L. E. McL.,	Tweed, O
Poole, Alfred,	Wakefield, Q
Porter, J. A.,	Kemptville, O
Pothier, C. J.,	Woonsocket, R. I
Porteous, Wm.,	Pembroke, O
Powell, Fred. H.,	Ottawa, O
Powne, N. G.,	Nashville, Tenn.
Pringle, W. R.,	Cornwall, O
Quirk, Ed. L.,	Aylmer, O
Raymond, A.,	Moulinette, O
Raymond, G. H.,	Springfield, N. B
Renner, W. Scott,	Jordan Station, O
Richardson, Geo. C.,	South March, O
Ritchie, Robt. F.,	Dirleton, O
Robertson, Arch. McD.,	Brockville, O
Robertson, Francis D.,	Lennoxville, Q
Ross, Donald Lawrence,	Winthrop, O
Ross, Lewis Davidson,	Montreal, Q
Ross, Lewis Fred.,	Montreal, Q
Rowat, W., McL.,	Manotic, O
Rowell, G. B.,	Abbotsford, Q
Ruttan, R. F.,	Napanee, O
Schmidt, Andrew J.,	Faribault, Minn
Schmidt, Auguste F.,	Montreal, Q
Scully, D. J.,	Lindsay, O
Seery, Fred. J.,	Fredericton, N. B
Sharp, J. C.,	Studholme, N. B
Shibley, J. L.,	Yarker, O
Sinclair, Duncan,	Guildes, O
Smith, E. H.,	Prescott, O
Smith, W. A. DeW.,	Montreal, Q
Smyth, H. E.,	Worcester, Mass
Stephen, Geo. C.,	Montreal, Q
Stewart, Wm. G.,	Rundell, Q
Taylor, Fred.,	Shannonville, O
Trapnell, H. E.,	Harbour Grace, Nfld
Travers, John B.,	St John, N. B
Tupper, Freeman,	Milton, N. S
Turnbull, R.,	Russell, O
Walker. Felix D.,	Launching, P. E. I
Warneford, P. H.,	Norton, N. B
Webster, W. J.,	Napanee, O
White, Fred. J.,	Greens Pond, Nfld
White, Walker W.,	St. John, N. B
Wilkins, Horace P.,	Toronto, O
Wilkinson, Arthur W.,	Fredericton, N. B
Williams, Jas. F.,	Barrie, O
Williams, E. P.,	Ottawa, O
Willson, J. A. K.,	Manotic, O
Wilson, C. W.,	Cumberland, O
Wilson, S. F.,	Springfield, N. B
Wishart, D. J. G.,	Madoc, O
Wood, E. G.,	Londesboro, O
Woodruff, Thos. A.,	St. Catharines, O
Worthington, A. N.,	Sherbrooke, Q
Young, A. A.,	Barton, Vt

FACULTY OF ARTS.

Undergraduates in Arts.

FIRST YEAR.

Beaudry John S.,	Montreal, Q
Blackwood, Alex. L.,	Franklin Centre, Q
Bourne, Nicholas A. F.,	Montreal, Q
Brown, Samuel R.,	Huntingdon, Q
Cameron, Wellington A.,	Montreal, Q
Colby, Chas. W.,	Stanstead, Q
Dolloff, S. G.,	Stanstead, Q
Gerrie, John P,	Fergus, O
Henderson, Robt. B.,	Montreal, Q
Hill, Rowland S.	Montreal, Q
Holden, Rufus C.,	Montreal, Q
Johnson, Alexander R.,	Montreal, Q
Johnston, Robert,	Kincardine, O
Kemp, Howard D.,	Montreal, Q
Kingston, Charles B.,	Montreal, Q
Macaulay, J. J.,	Montreal, Q
McKenzie Malc.,	Tiverton, O
McLennon, Alex.,	Montreal, Q
McLeod, Murdoch J.,	Valleyfield, P.E.I
Murray, Alfred P.,	Montreal, Q
Naismith, James,	Almonte, O
Nicholls, Wm. A.,	Montreal, Q
Nicholson, John A.,	Eldon, P.E.I
Ogilvie, Shirley,	Montreal, Q
Patton, Hugh M.,	Montreal, Q
Solandt, Andrew P.,	Inverness, Q
Sweeny, George R.,	Montreal, Q
Walsh, James,	Ormstown, Q
Whyte, Charles W.,	Montreal, Q
Wright, Robert H.,	Montreal, Q

SECOND YEAR.

Bell, John H., Kars, O
Chalmers, William W., Huntingdon, Q
Clerk, Ronzo H., Montreal, Q
Clements, Ben., Berthier en Haut, Q
Craig, Leslie G., Montreal, Q
Dalpé, W. H., Roxton Pond, Q
Dewar, D. L., Glensandfield, Q
Evans, W. Herbert, Montreal, Q
Fyles, Wm. A., Cowansville, Q
Hibbard, Fred. W., Frelighsburg, Q
Holden, E. D. F., St. Armand Centre, Q
Internoscia, Antonio, Montreal, Q
Livingstone, Colin H., St. John, N.B
McCullough, O., Everton, O
MacDougall, John, Ormstown, Q
McKerchar, Colin, Glengarry, O
McOuat, John W., Inkerman, O
McRae, Duncan A., Applehill, O
McWilliams, Andrew, Ulster, O
O'Sullivan, R. Ben., Jamaica, W.I
Patterson, William, Ormstown, Q
Pedley, Francis, Cobourg, O
Ritchie, Philip E., Montreal, Q
Rochester, William M., Montreal, Q
Sanders, William, Montreal, Q
Sparling, William Stafford, O
Swabey, Charles, Charlottetown, P.E I
Thomas, S. A. A., Boucherville, Q
Topp, Francis, Granby, Q
Wallace. William E., Montreal, Q
Yates, Nelson P., Frelighsburg, Q

THIRD YEAR.

Blair, Geo. A., Manotick, O
Budden, Hanbury, Montreal, Q
Calder, George F., Stonefield, Q
Cameron, Donald, Tiverton, O
Colquhoun, Arthur, Montreal, Q
Currie, Alexander, Widder, O
Currie, W. T., Toronto, O
Grant, Andrew S., La Guerre, Q
Hargrave, Isaac L., High Bluff, Manitoba
Higgins, Joseph H., Brucefield, O
Lochhead, William, Listowel, O
McFarlane, James A., Pontiac Co., Q
McLean, John A., Lancaster, O
McLennan, Hugh S., Montreal, Q
McLennan, George A., Underwood, O
Macvicar, J. Harvey, Montreal, Q
Martin, J. C., Brown's Creek, P.E I
Roberts, W. D. Montreal, Q
Robertson, Philip M., Montreal, Q
Stewart, William G., Arundel, Q
Thompson, G. J. A., Harbour Grace, Nfld
Watson, Murray, Montreal, Q

FOURTH YEAR.

Blackader, Edward H., Montreal, Q
Cameron, Kenneth, Montreal, Q
Christie, William, Lachute, Q
Gerrie, Andrew W., Fergus, O
Haythorne, Thos., Charlottetown, P.E I
Kennedy, Robert Alex., Ottawa, O
Kirkpatrick Robert C., Montreal, Q
Larivière, Dolard, Roxton Falls, Q
Mabon, James, St. Louis de Gonzague, Q
Mackay, Adams A., River John, Pictou Co., N. S.
Marceau, James, Grand Ligne, Q
Massé, Godfroi, St. Pie, Q
Parent, M. B., Cobourg, O
Pedley, James W., Lakefield, Q
Rogers, George, St. Elizabeth, Q
Rondeau, Samuel, Montreal, Q
Turner, Walter H., Georgetown, Q
Unsworth, Joseph K., Hull, Q
Wright, George C.,

PARTIAL AND OCCASIONAL.

Adam, Alex. L., Atherley, O
Anderson, G. G., Montreal, Q
Arnton, Thomas S., Montreal, Q
Baldwin, F. M., Toronto, O
Barron, T. J, (B.A.), Lachute, Q
Caldwell, W. A., Montreal, Q
Cantlie, G. S., Montreal, Q
Clark, Andrew B., Angers, Q
Clement, A. B., Montreal, Q
Cook, Joseph S.,
Cornu, Felix, Angers, Q
Cosford, Henry N., Sarnia, Ont
Davies, Howell, Montreal, Q
Desbarats, Edward, Montreal, Q
Dickson, J. A. (B.A.) Trenholmville, Q
Gardner, Alex., St. Louis de Gonzague, Q
Geddes, John P., Montreal, Q
Graham, John H., B.A., Ormstown, Q
Groulx, A. B., Belle Rivière, Q
Henderson, Rob. B., Montreal, Q

Hodges, David H.,	Ross, O
Internoscia, A.,	Montreal, Q
Kennedy, W. S.,	Montreal, Q
Kirkland, J H.,	Union, O
Learoyd, Wm. H.,	
Locke, H. W.,	Montreal, Q
Loiselle, H O.,	St Philomène, Q
Macaulay, J. J.,	Montreal, Q
McCrae, D.,	
McCusker S. F.,	Hawkesbury, O
McDonald, A.,	Mongenais, Q
McIlraith, John H.,	Taltock, O
McKenzie J. W.,	Strathallen, O
McKenzie, Murdoch,	Montreal, Q
McLaren, John,	Montreal, Q
McLean, James A.,	South Finch, O
McLean, Donald A.,	Eldon, P.E.I
McLeod, M J.,	Valleyfield, P.E.I
MacLeod, Peter A.,	Forest Hill, P.E.I
McTaggart, N. B,	Montreal, Q
Morgan, John,	
Morin, J., B A.,	Three Rivers, Mass, U.S.
Nicholson, John A.,	Eldon, P.E.I
Plante, Robt. W.,	Montreal, Q
Pinel, Joseph,	Montreal, Q
Richardson, A. W. (B.A.),	Montreal, Q
Robinson, W.	
Ross, Hugh,	Newbridge, O
Russell, Walter,	Bristol, Q
Seylaz, E. F.,	
Shrine, Walter D.,	Montreal, Q
Somerville, Wm.,	Montreal, Q
Speer, James C.,	South Dummer, O
Stephen, George C.,	Montreal, Q
Stewart, R. (B.A.),	Lachute, Q
Sutherland, James,	Montreal, Q
Trotman, Charles,	Montreal, Q
Thurlow, H. H.,	Ormstown, Q
Waddell, N.,	Metcalfe, O
Whillans, G. (B.A.),	Ottawa, Q
Whyte, Charles W.,	Montreal, Q
Whyte, George,	Montreal, Q
Wright, Robt.	Montreal, Q

FACULTY OF APPLIED SCIENCE.

FIRST YEAR.

Amyrauld, A. H.,	Sweetsburgh, Q
Ball, J. P.,	Charlottetown, P.E.I.
Carlyle, W. A.,	Woodstock, O
Carmichael, W. J.,	Montreal, Q
Darey, L. A.,	Montreal, Q
Forneret, V. F. W.,	Berthierville, Q
Henderson, T. R.,	Montreal, Q
Huntington, S.,	Mattawa, O.
May, J. E.,	Ottawa, O.
Moffatt, R.,	Walkerton, O.
Palmer, R. E.,	Charlottetown, P.E.I.
Spencer, H. Y.,	Franklin Centre, Q.
Walters, C. L.,	Montreal, Q.

SECOND YEAR.

Burns, J. A.,	Montreal, Q.
Brown, C. P.,	Montreal, Q.
Cowie, F. W.,	Caledonia, O.
Craven, J. B.,	Montreal, Q.
Dawson, G. H.,	Quebec, Q.
Evans, N N.,	Montreal, Q.
Ferrier, W. F.,	Montreal, Q.
Kerry, J. G. G.,	Montreal, Q.
Reid, W. M.,	Montreal, Q.
Stewart, A. F.,	Pictou, N.S.
Strong, A. W.,	Summerside, P.E.I.
Taylor, D.,	Waterloo, Q.
Trueman, H.,	Truemanville, N.S.
Watson, T. W.,	Little Rideau, O.
Weir, A.,	Montreal, Q.

THIRD YEAR.

Fortier, S.,	Leeds, Q.
Lesage, T. W.,	Montreal, Q.
Macy, E. McC.,	Melbourne, Q.
Mathewson, E. P.,	Montreal, Q.
Pitcher, S. H.,	Barbadoes, W. Indies
Routhier, J.,	Vankleek Hill, O.
Saunders, B. J.,	Farmersville, O.
Thompson, H. V.,	Oxford, N.S.
Trenholme, C. W.,	Montreal, Q.
Walters, H. McD.,	Montreal, Q.

FOURTH YEAR.

Davis, A.,	Adolphustown, O.	McKenzie, J.,	Stellarton, Pictou, N.S.
Forlong, G.,	Lachute, Q.	McMillan, D. E.,	Montreal, Q.
Graham, W.,	Montreal, Q.	Moffatt, J.,	Walkerton, O.
Hamilton, E. H.,	Montreal, Q.	McTaggart, D. D.,	Montreal, Q.
Hislop, J. L.,	Strasburg, O.	Ogilvy, D.,	Montreal, Q.
McDonald, J.,	Cornwall, P.E.I.	Robert, J. A.,	Beauharnois, Q.
		Smith, C. B.,	Winona, O.

PARTIAL.

Anderson, G. G.,	Montreal, Q.	Kennedy, W. S.,	Montreal, Q.
Benoit, R.,	P. Q.	Macfarlane —,	Montreal, Q.
Cummins, H. L.,	Manitoba.	Mignault, P. B.,	Montreal, O.
Costigan, A. H.,	Montreal, Q.	McCarthy, J.,	Sorel, Q.
Crossley, J.,	England.	Perkins, W. C.,	Vale Perkins, Q.
Dorval, H.,	St. Jerome, Q.	Roy, J.,	Montreal, Q.
Drummond, T.,	Council Bluffs, Manitoba	The Marquis Uguccioni,	Italy.
Hutchison, M. B.,	Montreal, Q.		

MORRIN COLLEGE, QUEBEC.

FACULTY OF ARTS.

Undergraduates.

Campbell, Arthur J.,	Quebec.	McLennan, Malcolm,	Gould, Q.
Campbell, Henry,	Quebec.	Paton, W. E.,	Sherbrooke, Q.
Ferguson, John A.,	Toronto.	Pilkington, K. A.,	Quebec.
Home, William A.,	Quebec.	Pilkington, W. A. C.,	Quebec.
Johnstone, G. N.,	Quebec.	Rivard, E. S.,	Montreal.
Kinnear, Albert,	Leeds, Q.	Rolph, Nathaniel,	Quebec.
MacDonald, John,	Scotstown, Q.	Silver, J. H.,	Danville.
MacDonald, M. S.,	Scotstown, Q.	Walters, Albert H.,	Quebec.

ST. FRANCIS COLLEGE, RICHMOND, P.Q.

FACULTY OF ARTS.

Bryan, Andrew,	Richmond, Q.	Haggart, John,	Richmond, Q.
Bryan, George,	Richmond, Q.		

SUMMARY.

Students in Law, McGill College,			26
" in Medicine	"		204
" in Arts	"	Undergraduates,	103
		Partial and Occasional	55
" in Applied Science,		Undergraduates,	51
		Occasional,	15
" in Arts, Morrin College,		Undergraduates,	16
		Occasional,	79
" " St. Francis College,		Undergraduates,	3
		Partial and Occasional,	4
Total number of Students,			556
Deduct entered in two Faculties,			7
			549
Teachers-in-training in Normal Schools,			107
Pupils in Model Schools,			365
Total Students and Pupils,			1021

Higher Examination of Women.

SENIOR ASSOCIATES IN ARTS.

1880.

GEORGINA HUNTER, MONTREAL.

1881.

MARGUERITA FRANCIS, MONTREAL.

School Certificates of the University.

ASSOCIATES IN ARTS.

1865.

Montgomery Jones.
John Ferguson.
Charles Cushing.
Robert H. Conroy.
Samuel Stevenson.
Wallace Clarke.
Frederick W. Evans.
Robert W. Forrester.
Edward B. Greenshields.
Montgomerie Lewis.
George Joseph Bull.
Albert Murray.
Daniel McLachlin.

1866.

Sidney Arthur Fisher.
Charles E. Porteous.
Will. W. Walkem.
Chas. G. Stewart.
Geoffrey W. Porteous.
Florence David.
Hew D. Whitney.
George W. Torrance.
Robt. M. Esdaile.

1867.

Charles H. Ferry.
James Rodger.

1867.—*Continued.*

Geoffrey W. Porteous.
Thomas C. Thompson.
Francis J. Shepherd.
Gerald Lloyd.

1868.

John Fraser Torrance.
Will. Osborne M. Cross.
Henry G. W. Badgley.
John B. Abbott.
John Gray Grant.
Thomas C. Hempsted.

1869.

Arthur F. Ritchie.
Simon J. Tunstall.
Charles R. Jones.
O'Hara Baynes.
Aaron D. M. DeSola.
Charles Jas. Fleet.
John Thos. Caldwell.
James M. Mitchell.
John Kay.
James Green.

1870.

William Bell Dawson.

1870.—*Continued.*

Archibald D. Taylor.
Hiram B. Stephens.
Henry W. Thomas.
Samuel Greenshields.
Sheringham A. Shepherd.
William McEachran.
David S. Robertson.

1875.

William D. Lighthall.
W. A. Farwell.
Robert T. B. Howard.
Charles A. Molson.

1876.

J. Herbert Darey.
Paul Theodore Lafleur.
Edwin Hudson Bisset.
Andrew G. Ross.
James R. Foster.
Frederick Mindon Cole.
William Dawson McGregor.
John Ewart.
J. Gordon Gibson.
Wilfred T. Skaife.
Charles J. Walker.

1877.

Alexander Falconer.
Thomas B. Macaulay.
Armand F. Teefy.
Mina Douglas.
M. Stuart Fraser.
William Martin.
Walter H. Snow.
Louisa McFee.
Margaret A. Mills.
Ida Papineau.
Walter E. Lyman.
Helen Macklen.
Jane Darling.
George Graham.
Murray A. Biggar.
Jessie Ross.
Eva Dawson.
Alice Cumming.
Kenneth R. Macpherson.
Walter H. Lancey.
Robert A. Wallace.
Alexander McGibbon.
Marietta Jones.
Frank Weir.
Nathaniel D. Drew.

1878.

Henri A. Lafleur.
Grace Darling.
Henry R. Fairclough.
Andrew Lawson.
William H. Boyle.
N. J. Rielle.
George Kapelle.
John B. Rose.
Lillian Martin.
Henry Cockfield.
Louisa Harrison.
David Young.
Lawrence C. Rose.
Bessie Radford.
Kate McKeand.
Maggie Stewart.
Maggie Campbell.
A. W. Martin.
Florence W. Bissett
C. W. Trenholme.
Robert Stirling.
Maggie White.
Frederick E. Belcher
Anna Baxter.
Minnie Greenshields.
Emma D. Meikle.
C. D. Godfrey.
Lawrence MacRae.
Neil McLennan.

1879.

James Charles Allan.
Charles Edward Bland.
George W. Hambley.
John C. Fields.
R. Norman Hudspeth.
Louisa McDonald.
Wyatt G. Johnston.
Robert Little.
Henry J. H. Petry.
Edward J. K. Noyes.
Edith Durdan.
Adolph Craft.
Richard F. Morris.
William Morris.
Duncan D. McTaggart.
Archibald McK. McMechan.
Donald John Fraser.
John Coutts.
Thomas Crawford.
Jessie McConnell.
Devereux Emmet.
Alfred E. A. Barlow.
Elizabeth Smith.
Claude L. Wheeler.
Charles McP. Holt.

1879.—*Continued.*

Maggie Osgood.
George S. Baker.
Arthur G. Weld.
William L. Murray.
Christina J. Galt.
George R. Mills.
Alexander Malcomson.
Thomas J. Tait.
Kenneth D. Young.
Albert W. Haldimand.

1880.

Edward H. P. Blackader.
William Logan.
Mary J. MacCallum.
Walter H. Turner.
Minnie H. McKean.
Mary B. Badenach.
Wm. C. Morrison.
Robert C. Kirkpatrick.
Julius T. Gnaedinger.
Richard S. Kinghorn.
Jean W. Johnston.
Norman R. Macaulay.
Hugh McLennan.
William Cherrie.
Eugene McMullan.
Elena C. Livingston.
William Christie.
James B. McNaughton.
Lyman Duff.
John D. Courtney.
Maud M. Lamb.
William Gibson.
James B Gibson.
Frank Baker.

1881.

Frank P. Bernard.
Charles R. Daoust.
Frederick L. Barlow.
Percy E. Judge.
Peter C. Mitchell.
Alexander J. Tolmie.
William Mitchell.
Edward P. Mathewson.
Henry Munderloh.
Ellen E. Coo.
Wilfred R. Morris.
John J. Arnton.
Hanbury A. Budden.
Manson D. Teetzel.
William T. Gunn.
George H. Guy.
Charles Burkholder.
William M. Reid.
Philip M. Robertson.
Percival Tibbs.
William Reid.
Ellen F. Kemp.
Grace Foster.
Alice M. Cook.
James W. Morrice.
Ridley L. Charlton.
James H. Bissett.
Andrew Stuart.
Mary E Clunie.
Archibald Robertson.
Arthur H. Irwin.

1882.

Albert G. B. Claxton.
Philip E. Ritchie.
Alexander R. Johnson.
John G. G. Kerry.
William S. Leslie.
Nevil N. Evans.
Charles P. Brown.
Walter F. Ferrier.
Thomas J. Vipond.
Charles J. Robertson.
William H. Evans.
John T. Crawford.
Robert S. Ross.
Ronzo H. Clerk.
Arthur Weir.
William A. Home.
Adelaide M. Bastable.
James R. Kinghorn.
Frederick H. Johnson.
Orrin Rexford.
Leslie G. Craig.
Marion Taylor.
Flora Taylor
William Hilton.
Cecil M. Maxwell.
Ernest Munro.
Brian H. Wand.
William A. Logie.
William A. Fyles.
Mary H. Ellicott.
Harriet A. Darey.
Mary J Metcalfe.
Emily E. Gross.
William H. Bentley.
Ernest L. Allard.
Florence N. Wilson.
George H. Dawson.
James Laurie.
Elizabeth Christie.
Elizabeth Donnelly.
Alice M. Wilson.
Laura M. McLaren.

1882.—*Continued.*

Mary E. Meikle.
Christina Wilson.
James H. Woods.
Phoebe E. Elliott.
Ida F. Smith.
Jane M. Bremner.

1883.

Meredith O. Smith.
Wellington A. Cameron.
Hugh M. Patton.
Annie C. McGregor.
Hubert D. Hamilton.
Henry W. Welch.
Rowland S. Hill.
Joseph C. Barlow.
Ellen M. Clunie.
Arthur D. Fry.
Albert H. Campbell.
Alexander T. Galt.
Albert E. Holt.
Alfred P. Murray.
Geo. A. Clunie.
Howard D. Kemp.
Samuel Cummings.
Wm. J. Carmichael.
Charles B. Kingston.
Helen B. Blackader.
Mabel Aldrich.
Charles L. Walters.
Robert B. Henderson.
Henry G. McLaren.
Wm. A. Nichols.
Edith Turner.
Alexander McLennan.
Geo. S. Cantlie.
Lawrence A. Darey.
Andrew B. Clark.
Peter Reid.
Neil B. McTaggart.
Mattie C. Murphy.
Alfred P. Bryson.
Graham B. Macpherson.
Ada A. McGowan.
Thomas R. Henderson.
Robert M. Campbell.

1884.

[See list below.

JUNIOR CERTIFICATES.

1875.

Charles F. Dawson.
William C. Norris.
William S. Kerry.
Frank D. Adams.

1876.

William R. Robertson.

1877.

Annie Cusack.
Lizzie Cox.
Ella Gardiner.
Elizabeth Monk.
Jessie Logan.
Alexander W. Richardson.

1878.

George Ross.
David McKinnon.
Jane Wood.
Annie Troup.
Jennie Edgar.
Edwin W. Griffin.
Mary Troup.
Herbert R. Macaulay.
Jessie Stewart.
Alexander Ambrose.
Milton Vandewater.
Mulie Somerville.
Jaggie Osgood.
Fritz G. Gnaedinger.
Robert A. Elliott.
Dora Scott.
Frederick F. Kingston.
William H. Adams.

1879.

Margaret McCoy.
Ina Sutherland.
Hattie Dally.
Grace Darling.
Margaret Wilson.
Augusta Pedersen.
George Corey Thomson.
Georgina Iles.
Mary Mitchell.
Arthur Mercer.

1880.

Jessie S. Greenshields
William Graham.
Bertha Savage.
Ellie M. Cole.
David Ogilvie.
Jeannie Ross.
Lorrie Dickson.

1881.

Annie B. Barr.
Agnes H. Fairbairn.
John S. Cassils.
Martha Martin.
Mary C. Greer.

Jeannie Dickson.
Ernest Allard.
Nellie Hall.
Henry Allen.
J. W. H. Milne.

1882

Cora Comfort.
William F. Graham.

Annie Munro.
Daniel Taylor.

1883,

John Coon.
Albert E. Botterell.
Annie Murphy.
E. Herbert Stafford.
Lucie E. Ives.

1884.
[See list below.]

STANDING IN THE EXAMINATIONS, 1884.

No.

ASSOCIATES IN ARTS.

4.	Rosalie McD. McLea (Girls' High School, Montreal),	1300	Marks.
8.	Octavia G. Ritchie (Girls' High School, Montreal),	1179	"
15.	John L. Day (High School, Montreal),	1111	"
44.	Charles R. Hamilton (Bishop's College School, Lennoxville),	1028	"
46.	Henri G. Joly (Bishop's College School, Lennoxville),	987	"
29.	James E. Le Rossignol (High School, Montreal),	976	"
27.	Charles B. Gordon (High School, Montreal),	943	"
23.	Charles J. F. Martin (High School, Montreal),	939	"
7.	Hellen R. Y. Reid (Girls' High School, Montreal),	907	"
45.	Wm. C. G. Heneker (Bishop's College School, Lennoxville),	903	"
47.	Edward A. Robertson (Bishop's College School, Lennoxville),	839	"
55.	Mary E. E. Hunt (Waterloo Academy),	802	"
48.	Charles C. Smith (Bishop's College School, Lennoxville),	781	"
5.	Alice J. Murray (Girls' High School, Montreal),	770	"
9.	Jessie W. Stewart (Girls' High School, Montreal),	768	"
41.	F. H. Pickel (Cowansville Graded School),	760	"
53.	George R. Kinloch (Lincoln College, Sorel),	754	"
2.	Emily C. Forbes (Girls' High School, Montreal),	749	"
20.	W. Archibald H. Kerr (High School, Montreal),	703	"
54.	George Lyman (Lincoln College, Sorel),	696	"
19.	Alexander M. Jeffrey (High School, Montreal),	690	"
6.	Lillias S. Molson (Girls' High School, Montreal),	641	"
1.	Hattie W. Bennett (Girls' High School, Montreal),	631	"
31.	John Paterson (High School, Montreal),	627	"
32.	Robert H. Reid (High School, Montreal),	625	"
43.	Edmund H. Duval (Bishop's College School, Lennoxville),	614	"
18.	Walter L. Jamieson (High School, Montreal),	610	"
36.	Reginald D. Dyer (High School, Montreal),	538	"

JUNIOR CERTIFICATES.

3.	Frances H. Hadley (Girls' High School, Montreal),	701	"
52.	Arthur L. Crawford (Lincoln College, Sorel),	622	"
30.	Alexander F. Mitchell (High School, Montreal),	526	"
49.	Frederick A. Stabb (Bishop's College School, Lennoxville),	466	"
51.	Minnie M. Howe (Hatley Academy),	458	"

STANDING IN THE SEVERAL SUBJECTS.

[The numbers correspond with those in the preceding list. Candidates whose numbers are in parentheses are equal in standing.]

I. Preliminary.

Reading.—[At Montreal.—1, (9, 36), (4, 5, 19, 32, 53), 27, (2, 7, 14, 15, 54), (3, 6, 20, 21, 35, 52), (8, 12, 13, 16, 17, 18, 22, 23, 24, 25, 26, 28, 29, 30, 31, 33, 34)]. [At Lennoxville.—(44, 45), 43, 46, 47, 48, 49, 50)]. [At Compton.—(38, 39), 40]. [At Cowansville.—41]. [At Hatley.—51]. At Waterloo.—55].

Dictation.—(15, 19, 52), (1, 4, 12, 51), (18, 23, 29, 36, 55), (3, 30), (27, 53), (2, 13, 22, 24), (5, 7, 18, 20, 28, 54), (9, 21, 38, 49), 48, (40, 45), (6, 39, 44), (14, 41, 47), (16, 25, 32, 43, 46).

English Grammar.—23, (8, 44), 4, 51, 27, (5, 22), (29, 41, 49, 50, 55), (6, 35), (15, 20, 45), 52, 9, 46), (7, 17), (1, 19), (3, 12, 31), (2, 16, 48, 53), (21, 30), 47, 39, (14, 18, 28), 43, (34, 36), (33, 54), 25, 32, 13, (26, 40), 38.

Arithmetic.—(4, 46), 16, 44, (27, 55), 7, 35, 51, (1, 15), (29, 31), (19, 48), (34, 41), (8, 9), 6, 45, 33, 49), (23, 47, 53), (18, 22, 43), 20, 54, (17, 38), (5, 36), 3, 50, 13, 32, (2, 52), (39, 40), 26, 21, 30.

Geography.—55, (4, 8, 46, 47), 15, (27, 29, 45), (6, 36, 44, 48, 49), (22, 24, 30, 54), (35, 45), (43, 50), (23, 31), (12, 14, 18, 40), 26, (5, 19, 21, 32, 39, 52), (1, 3, 20, 33), (16, 38), (7, 9, 25), 51, (2, 13), (17, 53), 34, 28.

British and Canadian History.—4, (15, 23, 27, 46), (5, 8, 55), 22, 29, (30, 36), (12, 39), (43, 47, 54), (3, 19), (33, 41), 24, (16, 32, 44), (20, 25, 40), 9, (7, 14, 18, 31), 50, 45, 35, (2, 6, 13, 38, 51), (21, 28, 34, 48, 53), 1, 52, 17, 26, (21, 49).

II. Optional.

[The asterisks indicate creditable answering].

Latin.—4*, 54*, 53*, 8*, 44*, 23*, 29*, 45*, 55*, 15, 52, 9, 47, 19, 50, (2, 27), (36, 48), 51, 22, (5, 20), 46, 18, 25, 41, 13, 12.

Greek.—4*, 15*, 23*, 44*, 47, 53, 45, 25, 18, 22, 19, 41, 13, 20.

French.—(4*, 48*), 44*, 46*, 8*, 50*, 47*, 55*, 43*, 15, (2, 5), 23, 1, 7, 49, 20, (30, 54), (12, 45), (27, 29); 3, 17, (9, 25), (35, 41), 28, (19, 53), 22, 36, 6, 18.

German.—8*, 35*, 7*, 3*, 52*, 2*, 6*, 50, 34, (28, 33), 32, 31.

Geometry.—44*, 29*, 46*, 41*, 35*, 8*, (52*, 55*), 9*, 32*, 4*, (45*, 48*), (27, 53), 51, 15, (23, 31, 47), 54, 7, 43, 34, 16, 49, 1, 2, 5, (12, 26) (6, 17, 20).

Algebra.—4*, 46*, (15*, 29*), 8*, 55*, 34*, 35*, 53*, 3*, 45*, 48*, 7, 33, 31, 27, 44, 17, 1, (18, 43), 52, 47, (9, 36), 23, 2, 19, 54, 40, (26, 41), (16, 20), 5, 32, 24, 49.

Trigonometry.—15*, (4*, 46*), 27, 29, 54, 35, 8, 31.

Natural Philosophy.—38.

Drawing.—29, 35, 32, (30, 45), 41, 31, 27, 44, 48, 33.

English Language.—4*, 15*, 27*, 23*, 8*, 35*, 29, (5, 7), 20, 22, (2, 9), (13, 19), (12, 17, 30), (18, 31), (25, 28), (1, 6), 21, (3, 33), (14, 24), 34.

English Literature.—4*, 8*, 5*, 27*, 29*, 9*, 3*, (22*, 23*), 7*, 15*, 1*, 44*, 12*, 21, 2, 35, 19, 50, (6, 33), 20, 46, (30, 47), 54, 24, 45, 41, (13, 16), 26, (28, 32, 52), (18, 34), (14, 48), 53, (17, 43), 25.

History.—8*, 4*, 27*, 5*, 22*, (3*, 29*), 36*, (15*, 23*), 9, 46, 43, (47, 55), 7, (33, 44), (2, 6, 35), 19, 16, 30, 54, 12, (1, 24, 25, 45), 20, 14, 18, (21, 26, 31), 13, 51, (17, 49), (48, 53).

Geography.—46*, 43, 15, 29, 22, 24, 55, 44, (27, 35), 45, (50, 36), 47, 41, (48, 49), 16, 23, 30, 20, 19, 26, 32, 18, 21, (33, 40).

Botany.—8*, 4*, 5*, 27*, 7*, 6*, 35*, 30*, 2*, 29*, 28, 32, 34, 33.

Chemistry.—4*, 31, (1, 27), 32, 29, 33.

DONATIONS

TO THE

LIBRARY OF McGILL COLLEGE.

FROM JANUARY, 1883, TO JUNE, 1884.

U. S. Government, Washington, D. C	Annual Report of the Chief Signal Officer for the year 1880. 2 vols.
Do	The Primary Triangulation of the U. S. Lake Survey. Washington, 1882.
Do	Annual Report of the Superintendent Coast and Geodetic Survey for the year 1880.
Geo. H. Boehmer, Esq., Washington	History of the Smithsonian Exchanges. Washington, 1882.
Provost and Senior Fellows, Trinity College, Dublin	Fourteen Volumes of the "Dublin University Press Series," Dublin, 1879 to 1882.
New York State Library, Albany, N. Y.	Documents relating to the Colonial History of the State of New York. Vols. XII and XIII. Albany, 1877-81.
Do do	Natural History of New York Palæontology. Vol. V, Part 2, Text and Plates, 2 vols.
Sir A. Campbell, Ottawa	Cases decided on the British North American Act, 1867, by John R. Cartwright. Vol. I. Toronto, 1882. 8 vols.
Norwegian Government, Christiania	The Norwegian North Atlantic Expedition, 1876-78. Parts VIII. and IX. Christiania, 1882.
Geo. B. Burland, Esq., Montreal	Canadian Magazine of Science.
The Provost of Paisley, Scotland	The Inauguration of the George A. Clark Town Hall. Paisley.
Mrs. Moat, Montreal	Twenty-two volumes Text Books.
Dr. B. J. Harrington, Montreal	The Biography of Sir William Logan. Montreal, 1883.
J. E. Hilgard, Esq., Washington	U. S. Coast Survey Reports for 1853, 54 and 61. Washington. 3 vols.
The Graduates' Society, Montreal	The Best Reading by Perkins: Whittier's Poems. Holmes' do Bryant's do Rawlinson's Origin of Nations. Do The Religions of the Ancient World. Lenornant. The Beginnings of History. The Works of "George Eliot." 10 vols. Young: The Sun. Poole: Index to Periodical Literature. Bow: Economies of Construction, in relation to Framed Structures.
J. H. R. Molson, Esq., Montreal	A Large Time-piece for the Library.
J. Fraser Torrance, Esq., Montreal	Schlegel. Essai sur la Physiolonomie des Serpents.
McGill College Book Club	One hundred and seventy-four volumes General Literature.
H. T. Bovey, Esq., Montreal	Applied Mechanics. Part I.
Do do	Report of the Chief Engineer of Canals. Ottawa, 1880.
Do do	Sewerage Plans of Torquay, England. Imp. Fol.
Wm. B. Taylor, Washington	Kinetic Theories of Gravitation. Washington, 1877. Pamp.
Do do	Physics and Occult Qualities, an address. Washington, 1882. Pamp.
Institution of Civil Engineers, London	Minutes of Proceedings. Vol. LXXI. London, 1883, 2 vols.
Chief of Engineers U. S. Army, Washington	Prof. Papers, Rifled Guns. Washington, 1883, 4to.
Henry Morton, Montreal	Dr. B.W. Richardson: The Temperance Lesson Book. London, 1882. 12mo. 3 copies.

Wm. Drysdale & Co., Montreal	Oliver. Practical Astronomy, Kingston, 1883, 8vo.
Sir Francis Hincks, Montreal	Eight Pamphlets on Canadian Politics, &c.
Boston Nat. Hist. Society, Boston	Proceedings of Vol. XXI., 1880-82. Boston, 1883, 8vo.
W. M. Hicks, Esq., Secretary Cambridge Philosophy Society, Cambridge	Proceedings of the Cambridge Philosophical Society, Vol. V. Part 5. Transactions of Do, 1883, Vol. XIII, Part 2, 1882.
Graduates Society	Jones: The Best Reading. New York, 1882, 2nd Series, 8vo.
H. Saxon Snell	Charitable and Parochial Establishments. London, 1881, 4to.
Malcolm Guthrie, Liverpool, Eng	Critical Examination of Herbert Spencer's Philosophy. London, 1882, 8vo.
Peter Wilson, Esq., North Carolina	Annual Report N. C. Experiment Agricultural Station, Raleigh, 1883, 8vo.
Senatus Academicus University, Edinburgh	Edinburgh University Calendar, 1883-84.
McGill College Book Club, Montreal	Sixty volumes General Literature.
Government of Ceylon, through the Secretary of State for the Colonies	Ancient Inscriptions in Ceylon, by Dr. Edward Muller.
Surgeon General U. S. Army, Washington	Surgical and Medical History of the Rebellion, Vol. II., Part 3. Washington, 1883, 4to.
Dominion Government, Ottawa	Census of Canada, Vol. III., Ottawa, 1883, 8vo.
U. S. Government Engineers, Washington	Report of Chief Engineer, 3 vols. Washington, 8vo.
Quebec Government	Statutes for 1883.
J. M. Allen, Hartford	The Locomotive, 3 vols. Hartford, 1880-83.
The Marquis of Lorne	Bronze Medal.
Sir Francis Hincks	British Guiana, by Rev. R. Duff. Glasgow, 1866. 8vo.
Society of Engineers, London	Transactions of the Society for 1882. London, 1883.
Sir Francis Hincks	British Guiana, by Geo. W. Bennett, Georgetown, 8vo.
Norwegian Atlantic Expd., Christiania	Part X, Meteorology, Christiania, 1883. 4to.
Wm. Kingsford, Montreal	The Canadian Canals, their History and Cost. Toronto, 1865. 8vo.
Civil Engineers, London	Minutes of Proceedings of vol. LXXII, Part 3, 1882-83. 8vo.
J. M. Duff, Montreal	Tuttle's Comprehensive History of Canada, 2 vols, 1882. 4to.
Quebec Government, Quebec	Journals of Legislative Council, Quebec, vol. XVII., 1883. 8vo.
U. S. Government War Dept., Washington	Annual Report of the Chief Signal Officer to the Secretary of the War for the year 1881. Washington, 1881. 8vo.
Ditto G. B. Loring, Washington	Report of the Commissioner of Agriculture for 1881-82. 8vo.
Government Ontario, Toronto	Annual Report of Agriculture and Arts, Ontario, 1882. Toronto, 1883. 8vo.
Dominion Government, Ottawa	Sessional Papers, vol. XVI. 8vo. 4 vols., Part 1 to 4. 1883.
Do do do	Do Vol. XVI. 2 vols. Parts 6 and 7,
Astronomer, Royal Greenwich, London	Observations, Astronomical, Magnetical and Meteorological for 1881. London, 1883. 4to.
Do do	Results of Same, 2 vols. London, 1883. 4to.
Sereno Watson, Cambridge, Mass	Contributions to American Botany.
M. W. Taylor, Montreal	Pioneers of the Eastern Townships.
Do do	The Bible in Gaelic, 2 vols.
Do do	The History of Prince Edward Island.
U. S. Government, Washington	The Fortifications of to-day. Washington, 1883.
P. J. Darey, M.A., Montreal	Principes de Grammaire Francaise. Montreal, 1883.
Prof. Hicks, M.A., Cambridge, Eng	On Toroidial Functions. Cambridge, 1881.
Do do	On the Motion of two spheres in a Fluid. Cambridge. 1880.
Do do	Also Thirteen Pamphlets.
D. P. Penhallow, Montreal	Tables in Vegetable Histology. Boston, 1882.
Institute of Civil Engineers, London	Five Botanical Pamphlets. Minutes of Proceedings. Vol. LXXIII for 1882-83.
R. A. Ramsay, Esq., Montreal	Vestiges of Natural History in Creation. London, 1845.

Natural History Society, Toronto ..... Check List of Insects of the Dominion of Canada
Peabody Institute, Baltimore ..... Catalogue of the Library. Part I., A to C.
Trustees British Museum, London ..... Catalogue of Birds. Vols. VII. and VIII. London, 1883.
Nova Scotia Historical Society, Halifax ..... Report and Collections of the ——— for 1878-83. Vols. I., II., and III.
Royal Society, London ..... Philosophical Transactions. Parts II., III. and IV. of Vol. 173.
Do do ..... Proceedings of the Royal Society, Vols. XXXIV and XXXV.
Do do ..... Catalogue of the Library. Part II. General Catalogue
Peter Redpath, Esq., Chislehurst ..... State Papers, 16 vols.
Chronicles and Memorials, 15 vols.
Scottish Chronicles, 7 vols.
Annual Register, 3 vols.
Surtees Society, 5 vols.
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Archælogia, 2 vols.
New Club Series, 5 vols.
Cruise of the Challenger. Zoology and Narrative, 7 vols.
Library Association Meetings. London, 1877-80. 4 vols.
Louis Frechette, Esq., Montreal ..... Les Fleurs Boreales. Paris, 1881.
Royal Institute British Architects, London ..... Transactions of ——— For the Session 1882-83.
Institute Civil Engineers, London ..... Minutes of Proceedings. Vol. LXXIV., Part 4, London, 1883.
Royal Dublin Society, Dublin ..... Transactions and Scientific Proceedings of——— 3 vols.
Secretary of State for India ..... Trigonometrical Survey of India. Vols. VII to IX. London, 1883.
British Association Av. Science, London ..... Report of Meetings at York and Southampton. 2 vols.
Graduates' Society, Montreal ..... Diaries and Correspondence of James Harris, Earl of Mahmsbury. 4 vols.
Chas. Glackmeyer, Montreal ..... Montreal Annual Reports for 1882.
U. S. Government, Washington ..... Coast and Geodetic Survey for the year 1881.
H. W. Ackland, Oxford ..... The Groundwork of Culture. Oxford, 1883.
British Association Advancement of Science .. Reports of Meetings for the years 1877 to 1882. 6 vols.
Charles E. Moyse, Esq., Montreal ..... Poetry as a Fine Art. London, 1883.
Academie Imperiale, St. Petersburgh ..... Bulletin de l'Academie Imperiale. Vol. XXIX. Part II.
Graduates' Society ..... Atlas du Voyage de la Perouse.
Mason Science College, Birmingham ..... Calendar for 1883-84. Birmingham, 1884.
Negretti and Zambra, London ..... Encyclopœdic and Illustrative Catalogue. London, 1883.
R. A. Peacock, Esq., London ..... Saturated Steam, the Motive Power in Volcanoes. London, 1882.
Smithsonian Institute, Washington, D. C. ..... Miscellaneous collection of———Vols. XXII. to XXVII. 6 vols.
Spencer F. Baird, Esq., Washington, D.C. ..... Bulletin of the U. S. Fish Commission. Washington, 1883.
U. S. Government, Washington, D.C. ..... Report of the Chief Signal Officer for the year 1882. 2 vols.
Provincial Government, Quebec ..... Session Papers. Vol. XVI. for 1883. Papers 1 to 75.
Geological Survey, Ottawa ..... Report of Progress, with Maps for 1880-81 and 82.
Hon. Robert Mackay, Montreal ..... Cobbett: A Grammar of the English Language.
Do do ..... Essais de Montaigue, par P. Christian. 2 vols.
Alfred C. Fryer, Montreal ..... Cuthberht of Luidisfarne, his life and times.
Dr. Egleston, New York ..... 42 Engineering and Metallurgical Pamphlets.
Royal Canadian Society, Ottawa ..... Proceedings and Transactions, of 1882-83. Montreal, 1883.
McGill Graduates' Society, Montreal ..... Ware: Modern Perspective and Plates, 2 vols.
American Institute: Mining Engineers ..... Transactions of——Vol. XI, for 1882-83.
J. A. R. Newlands, London ..... On the Discovery of the Periodic Law. London, 1884.
Trustees British Museum, London ..... Catalogue of Romances in the ———. London, 1883.

Sir Wm. Medleycott, Montreal	Chronological Chart, by E. J. Ensor.
M. H. Gault, Esq., Montreal	Proceedings and Transactions of the Royal Canadian Society.
Hon. J. Wurtele, Montreal	Fifty-four volumes Legal and Parliamentary Works.
J. E. Robidoux, Montreal	Part I. Revised Statutes. Quebec, 1883.
Provincial Government, Quebec	Journals of the Legislative Assembly, Vol. XVII.
Birmingham Philosophical Society	Proceedings of ———. Vol. III., Parts 1 and 2, Session 1881-2 ; 1882-3. 2 vols.
Graduates Society, Montreal	Rattray. The Scot in British North America, Vol. IV.
Prof. Grant, Observatory, Glasgow	Catalogue of Stars. Glasgow, 1883.
Senatus, Edinburgh University	Story of the University, by Sir Alexander Grant. London, 1884. 2 vols.

DONATIONS TO THE MUSEUM.

Donations received up to January 1st, 1884, have been acknowledged and noticed in the Reports of the Peter Redpath Museum; copies of which may be obtained on application to the Secretary. The following have been received up to June, 1884 :

From Mrs. Thomas Watson, Little Rideau, Ont., specimens of Rusichnites Grenvillensis, from Little Rideau.

" Mr. Charles Gibb, B.A., specimen of Siderastrea radians, from Bermuda. Also 2 specimens of Echinus, from Bermuda and Jamaica.

" Mr. Frederick Hague, B.C.L., specimens of Plover and Bittern (stuffed).

" Mr. J. Hoyes Panton, M.A., Winnipeg, collection of Fossils from the North-West.

" Mr. William Drysdale, Montreal, specimens of Gallus Domesticus (stuffed).

" Mr. A. E. Barlow, B.A., Ottawa, specimen of Jasper, from the Township of Hull.

" The Rt. Revd. the Bishop of Huron, large specimen of Amethyst, Fluor Spar, &c., from Thunder Bay, Lake Superior.

" Mr. T. F. Willis, Ottawa, specimen of Apatite, from the Argurion Mine, Wakefield, P. Q.

" Mr. James Crossby, Montreal, specimen of Samarskite, from Berthier Co.

" Dr. A. R. C. Selwyn, F. R. S., Ottawa, collection of Rocks from the Eastern Townships.

" Mr. Charles Robb, Montreal, Large Crystal of Phlogopite, from North Burgess, Ont.

McGill Normal School.

1884–85.

Government of the School.

Under the Regulations for the establishment of Normal Schools in the Province of Quebec, the Superintendent of Education is empowered to associate with himself for the direction of one of these Schools the Corporation of McGill University, Montreal. In accordance with this arrangement, the Provincial Protestant Normal School is affiliated with the McGill University, and the Vice-Chancellor with four members of the Corportion of the University, constitute the Committee of the Normal School for the Session of 1884-85.

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Head Master of Boys' School.

Mr. John P. Stephen, *Assistant Master of Boys' School.*

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Miss Lucy H. Derick, *Head Mistress of Primary School.*

ANNOUNCEMENT FOR THE SESSION 1884–85.

This Institution is intended to give a thorough training to teachers, especially for the Protestant population of the Province of Quebec. This end is attained by instruction and training in the Normal School itself, and by practice in the Model Schools; and the arrangements are of such a character as to afford the greatest possible facilities to Students from all parts of the Province.

The twenty-eighth Session of this school will commence on the first of September, 1884. The complete course of study extends over three years, and the Students are graded as follows:—

1. *Elementary School Class*,—Studying for the Elementary School Diploma.
2. *Model School Class*,—Studying for the Model School Diploma.
3. *Academy Class*,—Studying for the Academy Diploma.

The Announcement of the School, containing details as to courses of study, bursaries and other privileges of students, and regulations, may be obtained on application to Dr. ROBINS, Normal School, Belmont Street, Montreal.

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1. CONDITIONS OF ADMISSION AND OF OBTAINING DIPLOMAS.

Candidates for admission into the Elementary School Class will be required to pass an examination in Reading, Writing, the Elements of Grammar, Arithmetic and Geography; and to produce the certificate, and sign the application, referred to in Articles 1 and 2 of the Regulations. Admission into each of the higher classes requires a knowledge of the subjects of the previous one.

Associates in Arts of the University may be admitted into the Elementary School Class, and, provided that they have passed in Geometry, Algebra and French, into the Model School Class, without examination.

In the Examinations for entrance into the Academy Class, the Principal may allow exemptions to Associates in Arts for the subjects in which at the examinations for that certificate they have passed with credit.

Each Student must produce a certificate of good moral character from the clergyman or minister of religion under whose charge he has last been, and also testimony that he has attained the age of sixteen

years. He will also be required to sign a pledge to teach for three years in some Public School in the Province of Quebec.

There will be a Semi-sessional Examination at Christmas, which all Students are required to pass in order to continue in the Classes.

At the close of the first year of study, Students may apply for examination for diplomas giving the right to teach in Elementary Schools; and after two years' study, or, if found qualified at the close of the first year, they will, on examination, be entitled to diplomas as teachers of Model Schools.

Students having passed the examination for the Model School Diploma, with creditable marks in Classics and Mathematics, or having otherwise advanced to the requisite knowledge, may go on to the Academy Class, and, on examination, may obtain the Academy Diploma.

Students are expected to give their whole time and attention to the work of the School, and are not permitted to engage in any other course of study or business during the sessions of the School.

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2. Privileges of Students.

On complying with the above conditions, all Students will be recognized as *Teachers-in-training*, and as such will be entitled to free tuition, and to bursaries in aid of their board, not exceeding $36.00 per annum in the two first Classes, nor $80.00 in the Academy Class, should they be successful in obtaining the diploma at the final examination. A portion of this allowance will be advanced to such Students as are not resident in Montreal, on their passing the semi-sessional examination at Christmas.

Under the regulations subjoined, and with the view of extending the benefits of the school to all parts of the country, those who reside at a distance of more than ninety miles from the city of Montreal will also be entitled to a small allowance for travelling expenses, proportionate to the distance.

Students resident in Montreal may share in the Bursary Fund, only on producing certificates from their ministers or clergymen that such aid is absolutely necessary to their continuing in attendance at the school.

In addition to religious instruction of a general Protestant character by the Professors, arrangements will be made for special religious instruction by ministers representing the several denominations with which the Students may be connected.

No boarding-house is attached to the institution, but every care will be taken to ensure the comfort and good conduct of the Students in private boarding-houses approved by the Principal. Board can be obtained at from $10 to $14 per month.

The Prince of Wales Medal and Prize will be given to the student taking the highest place in the Model School Class, provided that such student shall attain to the standard fixed by the Regulations of the Council of Public Instruction for this Medal.

The Marquis of Lansdowne Medal will be given to the Student taking the highest place in the Academy class.

The J. C. Wilson Prize of $40 and a Book, contributed by him as a former Student of the School, will be offered for competition to the candidates for the Elementary Diploma, and will be given for the highest aggregate number of marks.

All the preceding regulations and privileges apply to female as well as to male students.

Persons holding the degree of M.A. or of B.A. of any University in the Province of Quebec may receive the Academy Diploma on the conditions stated below, page 4.

3. Course of Study.

N.B.—The subjoined Course of Study has been designed, and all instruction in it is given, with express reference to the work of teaching.

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1. ELEMENTARY SCHOOL CLASS, STUDYING FOR THE ELEMENTARY SCHOOL DIPLOMA.

First Term, from September 1st to December 3rd.

(*Entrance examination as stated above.*)

English.—The structure of sentences. Orthography and orthoepy. Penmanship. The study of Macaulay's Essay on Milton.

Geography.—General view of continents and oceans. Map of North America.

History.—Outline of general and of sacred history.

Arithmetic.—Simple and compound rules and fractions.

Algebra.—The elementary rules.

Geometry.—First Book of Euclid to 20th proposition.

French.—Darey's Principes de Grammaire Française to page 54, Lectures Françaises to page 20.

Reading and Elocution.

Drawing.—Elements and simple outlines.

Music.—Vocal music with part songs.

Second Term, January 6th to end of Session.

(*Pupils entering at the commencement of this term must pass the examination of the class in the work detailed above.*)

English.—Structure of words and sentences. Etymology, derivation and syntax. Study of Milton's L'Allegro and Il Penseroso, and the Cotter's Saturday Night of Burns.

Geography.—Contour, elevations, river systems, political divisions and chief cities of South America and the Old World.

History.—England.

Arithmetic.—Proportion and percentage. Properties of numbers. Mensuration.

Algebra.—Simple equations of one unknown quantity with problems.

Geometry.—First Book of Euclid with deductions.

Art of Teaching.—Lectures on methods of education and school arrangements, including school laws.

French.—Grammar continued: including reading, translation, oral and written exercises. Dominion Phrase Book.

Botany.

Reading and Elocution.

Drawing.—Freehand, industrial.

Music.—Elements of vocal music and part songs.

Practice in Teaching in the McGill Model Schools and in the St. George's Model School, as directed by the Principal.

Religious Instruction will be given throughout the Session.

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2. MODEL SCHOOL CLASS, STUDYING FOR THE MODEL SCHOOL DIPLOMA.

(Students entering the school in this second year must have passed a satisfactory examination in the subjects of the Elementary School Class, and will be expected to attend the lectures on the Art of Teaching given in that Class. The Class will pursue its studies throughout the Session, without division into terms.)

English.—Principles of grammar and composition. Style. History of the English Language. Study of Wordsworth's Intimations of Immortality, Poe's Sleeper and Tennyson's Lotos Eaters.

Geography.—Mathematical and physical. Use of the globes.

History.—Canada, Greece and Rome.

Art of Teaching.—Lectures on methods of education and school arrangements, including school laws.

Arithmetic.—Commercial arithmetic and bookkeeping. Logarithms.

Algebra.—Equations of more than one unknown quantity, and quadratics.

Geometry.—Second, third and fourth books of Euclid with application to mensuration.

Object Lessons.

Latin.—Elements as in Bryce's 1st Latin Reader.

Greek.—Optional after Christmas to students sufficiently advanced.

French.—Translation from French into English, and from English into French, Darey, Principes de Grammaire Française, Lectures Françaises, Dominion Phrase Book.

Agricultural Chemistry.— Principles, and application to Canadian agriculture.

Elocution.

Drawing.—Elements of perspective.

Music.—Instrumental music, part songs, an rudiments of harmony.

Practice in Teaching.—In the McGill Model Schools and in the St. George's Model School, as directed by the Principal.

Religious Instruction throughout the Session.

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3. ACADEMY CLASS, STUDYING FOR THE ACADEMY DIPLOMA

Students entering this Class must have passed a creditable examination in the subjects preparatory to the Course of Study.

Logic.—Jevons' Elementary Lessons.

Anglo-Saxon.—Earle's Book for Beginners.

Philology.—Earle's Philology.

Botany.—Review with the Elementary School Class.

Mathematics.—Trigonometry, solid geometry and mechanics: —Galbraith and Haughton.

Latin.—Horace Epistles, Book I.—Prose composition.

Greek.—Isocrates.—Panegyricum.

History.—English.

French.—Review with the Model School Class.

Elocution.

Drawing.

All pupils of this class who have not previously done so, must attend lectures on the Art of Teaching in the Elementary and Model School Classes. They must teach in the McGill Model Schools as directed by the Principal.

EXTRACTS FROM THE REGULATIONS.

Special Regulations for the admission of Teachers-in-training.

Article First.—Any person desirous of being admitted as a Teacher-in-training must apply to the Principal of the Normal School, who, on his producing an extract from the Register of Baptisms, or other evidence, showing that he is full sixteen years of age, with the certificate of character and conduct required by the 6th article of the General Rules and Regulations, approved by His Excellency the Governor-General in Council, on the 22nd December, 1856, shall examine the candidate.

If upon his examination it is found that the candidate can read and write sufficiently well, knows the Rudiments of Grammar in his mother tongue, Arithmetic as far as the rule of three inclusively, and has some knowledge of Geography, the Principal shall grant him a certificate.

Article Second.—The candidate having thus obtained the certificate of the Principal, shall then (in the presence of two witnesses who, with the Principal, shall countersign the same) sign an application in writing for admission, containing the declaration required by the 23rd general regulation. This shall be forwarded to the Superintendent of Education, together with all the certificates and other documents required, and if the whole be found correct the Superintendent shall cause the name of the candidate to be inscribed in the Register, and notice thereof shall be given to the Principal.

Article Third.—The Teachers-in-training shall state the place of their residence; and those who cannot reside with their parents will be permitted to live in boarding-houses, but in such only as shall be specially approved of. No boarding-houses having permission to board male Teachers-in-training will be permitted to receive female Teachers-in-training as boarders, and *vice versa*.

Article Fourth.—Every Teacher-in-training, on passing the examination, will be allowed a sum, not exceeding $36, to assist in paying his board. (*)

Article Fifth.—Every Teacher-in-training residing at a distance of more than ninety miles from the City of Montreal, shall be entitled to receive an allowance for travelling expenses proportionate to the distance, but not to exceed ten dollars *per annum*.

Article Sixth.—The total amount of allowances paid to Teachers-in-training under the foregoing articles shall not exceed $1,333·33 currency, yearly—that being the sum granted for the object; and when the whole of this amount is appropriated, such Teachers-in-training as may apply for admission shall not be entitled to any portion thereof until vacancies shall occur.

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* Except in the case of Teachers-in-training for the academy Diploma, who may receive a sum not exceeding $80.

Special Regulations for Government and Discipline.

Article First.—Teachers-in-training guilty of drunkenness, of frequenting taverns, of entering disorderly houses or gambling houses, or keeping company with disorderly persons, or committing any act of immorality or insubordination, shall be expelled.

Article Second.—There shall be no intercourse between the male and female Teachers-in-training while in School, or when going to, or returning from it. Teachers of one sex are strictly prohibited from visiting those of the other.

Article Third.—They are on no account to be absent from their lodgings after half-past nine o'clock in the evening.

Article Fourth.—They will be allowed to attend such lectures and public meetings only as may be considered by the Principal conducive to their moral and mental improvement.

Article Fifth.—Proprietors of boarding-houses authorized by the Principal shall report to him any infraction of the rules with which they may have become acquainted.

Article Sixth.—The Professors shall have the power of excluding from the lectures for a time any student who may be inattentive to his studies, or guilty of any minor infraction of the regulations.

Article Seventh.—Teachers-in-training will be required to state with what religious denomination they are connected ; and a list of the Students connected with each denomination shall be furnished to one of the Ministers of such denomination resident in Montreal, with request that he will meet weekly with that portion of the Teachers-in-training, or otherwise provide for their religious instruction. Every Thursday after four o'clock will be assigned for this purpose.

Article Eighth.—In addition to punctual attendance at weekly religious instruction, each Student will be required to attend public worship at his own church, at least every Sunday.

Intending Students may obtain all necessary information on application to the Principal or either of the Professors.

Regulations Respecting Academy Diplomas.

Hereafter three grades of Academy Diplomas for Protestant Academies or High Schools may be granted by the Superintendent of Education, as follows:—

1. *The First Class Academy Diploma* to candidates who, being graduates in Arts of some British or Canadian University, and having taken both Latin and Greek in their course of study, have also passed the examination in the Art of Teaching in the McGill Normal School, as prescribed by its regulations,—certification of the above to be made by the Principal of the Normal School.

2. *The Second Class Academy Diploma* to candidates who have taken the Academy Diploma of the McGill Normal School or of a Board of Examiners, and have thereafter passed the second year's or intermediate examination of a University in the Province of Quebec, or (in the case of female candidates) have passed in the examinations of the Universities for Senior Associate in Arts, including the examinations in Latin and Greek,—certification of the same to be made by the University.

3. *The Third or Ordinary Academy Diploma* to candidates who have passed the examination for the same before the Normal School Examiners,—certification of the same to be made by the Principal of the Normal School.

In the distribution of the Superior Education Fund, only those Academies in which a first or second class Academy Teacher has been engaged, shall be considered to be entitled to the first and second grade of subvention from the Superior Education Fund.

THE GRADUATES' SOCIETY

OF

McGILL UNIVERSITY.

INCORPORATED 1880.

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OF THE

McGILL UNIVERSITY,

MONTREAL.

SESSION OF 1883–84.

Montreal:
PRINTED BY JOHN LOVELL & SON,
ST. NICHOLAS STREET.
1884.

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CLASSICAL & MODERN LANGUAGE SCHOLARSHIPS.

GREEK.

MONDAY, SEPTEMBER 17TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate :—(A) Euripides, Medea, vss. 1251-1270.

2. (*a*) Give the order and explain the construction of the last three verses of the above extract. (*b*) Point out any Ionic forms that occur in the same ext. (*c*) Give the Attic equivalents of the following Doricisms.—*σᾶς, γονᾶς, μάταν, κυνανεᾶν, πετρᾶν, ἀχᾶν, τάκου, δυνάσει, Ἄιδα.*

3. (*a*) *οὔ σε μὴ μεθῶ, οὐ μὴ ὑσιενὴς ἔσει* :—Translate and explain the force of *οὐ μή* when used, (1) with the Fut. Ind.; and (2), with the Aor. Subj. (*b*) Give the import of the prepositions in :—*ἐπεὶ γενναῖος Αἰγεῦ παρ' ἐμοὶ δεδόκησας. σοφώτερ' ἢ κατ' ἀνδρα. δέχου δὲ μὴ πρὸς ἡδονὴν λόγους. προφέρειν εἰς εὐτυχίαν τῶν γειναμένων.*

4. (B) Translate :—Demosthenes, Olynth. III., §§ 34-37, inclusive.

5. Write short explanatory notes on :—*ἐξω τῆς ἡλικίας. εἰσεφέρετε κατὰ συμμορίας. νομοθέτας καθίσατε. προπέποται τὰ τῆς πόλεως πράγματα. βοηδρόμια πέμψωσιν. τὰ θεωρικὰ. τὰ μυστήρια.*

6. (*a*) Define and state the difference in meaning between *λόγον τυχεῖν* and *λόγον διδόναι. θεῖναι νόμους* and *θέσθαι νόμους. γράφειν παράνομα* and *γράφεσθει παρανόμων. εὐθύνας ἀπαιτεῖν* and *εὐδύνας ὑπέχειν. εὐθύνας ὀφλεῖν* and *εὐθύνας ἀποφεύγειν.* (*b*) Note various readings and metaphorical expressions in ext. (B). (*c*) Give the dates of the delivery of the Olynthiacs.

7. Translate :—(C) Xenophon, Hellenics, I., chap. i., §§ 32-35, inclusive.

(D) Translate, Thucydides, Book VI., Chap. xliii, down to *κατ' ὀλίγον προσπίπτουσα.*

διὰ φόβου εἰσί :—Comment on and illustrate this use of *διά*. Explain the force of *ἐς* in *ἀναστῆσαι Ἀθηναίοις ἐς Τάραντα*, and also *περὶ* in *περὶ τῇ Σικελίᾳ ἢ του ἐκείνους περαιωθῆναι.*

(E) Herodotus, VIII., chap. cvii.

8. Write short explanatory notes, historical or critical, on any expressions in the above extracts, that appear to you to need elucidation.

9. State the difference between :—(*a*) *ἔβησα* and *ἔβην*. *ἔστησα* and *ἔστην*. *ἔφυσα* and *ἔφυν* *πέπεικα* and *πέποιθα*. *ὅλωλεκα* and *ὄλωλα*. (*b*) The various meanings, according to their accent, of :—*εἰμι*, *τιμησαι*, *νεων*, *οἰκοι*, *σιγα*, *οιος*.

10. Mention the forms in Latin cognate with :—*χειμών*, *ἐαρ*, *αἰών*, *ἥλιος*, *ἀνεμος*, *νεφέλη*, *ὄμβρος*, *δίς*, *θύρα*, *σελήνη*.

LATIN.

TUESDAY, SEPTEMBER 18TH :—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate :—(A) Tacitus, Annals, Book I., chap. lxxiii.

2. Write short explanatory notes (grammatical) on the meaning of the following :—(*a*) Sullae *dominatio*, Crassi *potentia* (c. 1). (*b*) In Augustum cessere (ib.). (*c*) *Abolendae* magis *infamiae* (3). (*d*) Haec atque talia *agitantibus* gravescere valitudo Augusti (5). (*e*) Ambulantis Tiberii *genua advolveretur* (13.) (*f*) *Causam* discordiæ (27). (*g*) Circumdatae stationes *stratis* (50).

3. Translate :—(B) Pliny Select Letters.

C. PLINIUS SEPTICIO CLARO SUOS.

Heus tu promittis ad cenam nec venis! Dicitur ius; ad assem inpendium reddes, nec id modicum. Paratae erant lactucae singulae, cochleae ternae, ova bina, alica cum mulso et nive (nam hanc quoque computabis, immo hanc in primis, quae periit in ferculo), olivae, betacei, cucurbitae bulbi, alia mille non minus lauta. Audisses comoedos vel lectorem vel lyristen vel, quae mea liberalitas, omnes. At tu apud nescio quem ostrea, vulvas, echinos, Gaditanas maluisti. Dabis poenas, non dico quas. Dure fecisti : invidisti, nescio an tibi, certe mihi, sed tamen et tibi. Quantum nos lusissemus, risissemus, studuissemus! potes apparatius cenare apud multos, nusquam hilarius simplicius incautius. In summa experire, et nisi postea te aliis potius excusaveris, mihi semper excusa. Vale.

4. Explain the use of the *Epistolary Imperfect*.

5. Translate :—(C) Horace, Satires I., Sat. x. vss. 72-92 ; and (D) Epistles I., ep. vi., vss. 56-68.

6. Explain:—(1) (*a*) Arbuscula. (*b*) Cimex Pantilius. (*c*) Ineptus Fannius. (*d*) Octavius optimus. (*e*) Mimnermus. (2) (*a*) Caerite cera. (*b*) Curule ebur. (*c*) Vilibus in ludis dictari. (*d*) Canusini more bilinguis. (*e*) Octonis Idibus. (*f*) Ad unguem factus homo.

7. Translate:—(E) Virgil, Georgics, I., vss. 316-334.

8. (*a*) Point out the poetic beauties of ext. (E). (*b*) Comment on the meaning of the following words or phrases:—parcis (vs. 4), Chaonius (8), Liber (7), Chalybes (58), Novalis (71), Improbus (119), Segnis (151), Intempestus (247), Cereale papaver (212), Genialis (320), Obscenus (470).

9. Translate:—(F) Terence Adelphi, Act II., scene 4.

10. Analyse and parse the following verbs:—siit, operiere, pepereris, reprensum, insuerit, cedo, jussim, ausim, recepso, extinxem, direxti, protraxe.

11. (*a*) Put into the *Oratio Obliqua*:—'Milites mittam, qui urbem capiant.' 'Hoc mihi placet, sed vobis non placet.' 'Expedit civitati ut redeam.' (*b*) Illustrate the constructions of *Quum causale* and *Quum temporale*. (*c*) Define synonyms, and give six instances from the Latin.

GREEK AND LATIN PROSE COMPOSITION.

MONDAY, SEPTEMBER 17TH:—AFTERNOON, 2 TO 5.

Examiner,..... .....REV. GEORGE CORNISH, LL.D.

(A) Translate into Greek:—

1. In the battle the Athenians fled away from the Lacedæmonian hoplites.

2. The enemy remained in the country three days, and then advanced en stadia by the same road.

3. Great fear fell upon all the people because of the presence of the enemy in their territory, who were ravaging the best portion of it.

4. Socrates used to converse with young men about wisdom and moderation, and teach them that they ought to obey the laws and practice virtue.

(B) Translate into Latin:—

Then Criton, hearing this, gave a sign to the boy that stood near him; and the boy departing, and having stayed for some time, came back with the person that was to administer the poison, who brought it pounded in a cup. And Socrates, looking at the man, said, "Well, my friend, as you are knowing in these matters, what is to be done?" "Nothing," he said, "but after you have drunk it to walk about, until a heaviness comes on in

your legs, and then to lie down; this is the manner in which you have to act." And at the same time he extended the cup to Socrates. And Socrates taking it—and, indeed, with great cheerfulness, neither trembling nor turning color, but as his manner was, looking sternly under his brows at the man—"What say you," he said, "to making a libation from this? may I do it or not?"

ANCIENT HISTORY.

TUESDAY, SEPTEMBER 18TH:—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Give the dates in Jewish history of (*a*) the Exodus; (*b*) the reign of Saul; (*c*) the Revolt of the Ten Tribes; and (*d*) the Babylonian Captivity. Name the most prominent kings of Judah.

2. Enumerate the nations that successively in ancient times held the supremacy, previous to the time of Cyrus the Elder.

3. Give the geographical position of ancient Media, Armenia, Parthia, Syria, Chersonesus (1) Taurica, (2) Thracica, and (3) Cimbrica, with modern names where you can.

4. Trace the leading events in the formation of the Empire, which in the reign of Darius, son of Hystaspes, threatened the independence of Greece.

5. Give the geographical limits and divisions, (1) of Greece Proper; (2) of Greek Colonization.

6. Give an account of the expedition of the Ten Thousand. What were the important events that arose out of it?

7. (*a*) Trace briefly the growth of the leading Grecian States, naming those that in succession held the hegemony of Greece. (*b*) What events and causes led to the establishment and overthrow of the supremacy of Athens?

8. Trace the most important political events and constitutional changes of Rome, with dates, from the period of the expulsion of the Kings down to the Punic wars.

9. Give an account of the constitutional changes effected by the reforms of C. Gracchus, and point out what was their general object.

10. What were the real grounds and the alleged pretexts, on the part of Rome and Carthage, severally, for beginning the Second Punic War?

FRENCH.

THURSDAY, SEPTEMBER 20TH :—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M.A., B.C.L.

Translate into English :

1. *Henriette.* Mais vous ne seriez pas ce dont vous vous vantez,
Si ma mère n'eût eu que de ces beaux côtés ;
Et bien vous prend, ma sœur que son noble génie,
N'ait pas vaqué toujours à la philosophie.
De grâce, souffrez-moi, pour un peu de bonté,
Des bassesses à qui vous devez la clarté :
Et ne supprimez point, voulant qu'on vous seconde,
Quelque petit savant qui veut venir au monde.

MOLIÈRE, *les Femmes savantes*,
A. 1 sc. 1

2. Name six of the characters of *les Femmes savantes.*

3. Which are the reasonable ones, and which are the ridiculous ones?

4. What did Molière attack in *les Femmes savantes?* What is the morality of that comedy?

5. Describe the characters of *Britannicus*, *Burrhus* in the tragedy of *Britannicus*. Given the *dénouement* of that tragedy.

6. Translate into French : However clever those two writers *be*, neither the one nor the other will *obtain* the vacant seat in the French Academy.

7. Explain the mood and tense in which you put *be :* and also the number in which you write *obtain* in the previous question.

8. Translate into French : There *came* a lady whom I did not expect. Have you finished the letter which you had *begun* to write? These are the answers which I *foresaw* they would give you. Explain fully how you write the participles *came*, *begun*, *foresaw*.

9. Translate into French :

George was too human or too much occupied with the tie of his neck-cloth to convey at once all the news to Amelia which his comrade had brought with him from London. He came into her room, however, holding the attorney's letter in his hand, and with so solemn and important an air that his wife, always ingeniously on the watch for calamity, thought the worst was about to befall, and, running up to her husband, besought her dearest George to tell her everything—he was ordered abroad, there would be a battle next week,—she knew there would.

THACKERAY, *Vanity fair.*

10. In what centuries did Montesquieu, Descartes, Ronsard, Christine de Pisan, Joinville live, and what works did they write?

ENGLISH LITERATURE.

Spalding :—*English Literature.* Trench :— *English, Past and Present.*

WEDNESDAY, SEPT. 19th :—MORNING, 9 to 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. What works did the following authors write, and when did they live? Alfred, Roger Bacon, Nigel Wircker, John Barbour, Roger Ascham.

2. Make a few notes relating to George Buchanan.

3. Under the heads Theological, Philosophical and Historical, enumerate the chief writers who flourished between 1558 and 1660, and mention the most important work of each.

4. Take six leading literary men of the present century and notice important criticisms of Spalding regarding their work.

5. What is meant by "two shapes of words?" Give examples.

6. How does Trench prove that languages "diverge?"

7. When was the influence of Spanish and Italian on our languages most marked? In whom is it seen?

8. Instance terminations or classes of words which are growing fewer.

9. Give Trench's ideas on Phonetic spelling.

ENGLISH LITERATURE.

WEDNESDAY, SEPT. 19th :—2 TO 5 P.M.

Examiner,.....CHAS. E. MOYSE, B.A.

Shakespeare :—*Julius Cæsar.* Same paper as for First Year Exhibitions.

Trench :—*Study of Words.* Same paper as for Second Year Exhibitions.

ENGLISH COMPOSITION.

THURSDAY, SEPTEMBER 20TH :—AFTERNOON, 2 TO 5.

Examiner,.....CHAS. E. MOYSE, B.A.

Write an essay on *one* of the following subjects :—History ; A ramble on the seashore ; A Republic.

MATHEMATICAL SCHOLARSHIP.

ALGEBRA—TRIGONOMETRY.

WEDNESDAY, SEPT. 19th, MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, L.L.D.

1. The double area of a triangle formed by three points, is

$$\begin{vmatrix} 1 & 1 & 1 \\ x' & x'' & x''' \\ y' & y'' & y''' \end{vmatrix}$$

2. Calculate the determinant:

$$\begin{vmatrix} 7, & -2, & 0, & 5 \\ -2, & 6, & -2, & 2 \\ 0, & -2, & 5, & 3 \\ 5, & 2, & 3, & 4 \end{vmatrix}$$

3. The product of two determinants is the determinant whose constituents are the sums of the products of the constituent in anyrow of one by the corresponding constituents in any row of the other.

4. The square of a determinant is a symmetrical determinant.

5. Calculate by Horner's Method the real roots of the equation

$$x^3 + x - 3 = 0.$$

6. Solve the equation $x^8 - 1 = 0$

7. Solve the equation

$$6x^5 - 11x^4 - 33x^3 + 33x^2 + 11x - 6 = 0.$$

8. Write

$$x^4 - 8x^3 + 12x^2 + 16x - 39 = 0$$

so as to show that 6 is a superior limit of the positive roots.

9. Prove that of m be odd.

$$2^m \, Cos^m \theta = 2 \, Cos \, m\theta + 2m \, Cos \, (m-2)\theta + 2\frac{m(m+1)}{1.2} \, Cos \, (m-4)\theta + \&c. \text{ to } \tfrac{1}{2}(m+1) \text{ terms.}$$

10. Calculate the Napierian logarethen of 2 to 6 places of decimals

11. In a spherical triangle prove

$$tan\ \tfrac{1}{2}\ (a+b) = \frac{Cos\ \tfrac{1}{2}\ (A-B)}{Cos\ \tfrac{1}{2}\ (A+B)}\ \ tan\ \tfrac{1}{2}\ c.$$

12. Investigate the expression for the area of a spherical triangle in terms of two sides and the included angle

$$Cot\ \tfrac{1}{2}\ E = \frac{Cot\ \tfrac{1}{2}\ a\ cot\ \tfrac{1}{2}\ b + cos\ C}{sin\ C}$$

13. Find the sum of n terms of the series

$$sin\ a + sin\ (a+\delta) + sin\ (a+2\ \delta) + v.$$

14. Prove Lhuilier's theorem for a spherical triangle.

$$tan\ \tfrac{1}{4}\ E = \sqrt{tan\ \tfrac{1}{2}\ s\ tan\ \tfrac{1}{2}\ (s-b)\ tan\ \tfrac{1}{2}\ (s-a)\ tan\ \tfrac{1}{2}\ (s-c)}$$

15. The three angles of a spherical trinngle are respectively 70° 39′, 48° 36′, 119° 15′, find the side opposite the first angle.

16. The two sides of a right angled spherical triangle are 42° 12″, and 54° 41″ 28′′′, find the hypotenuse.

CALCULUS.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. Prove the expression for the radius of curvature

$$\rho = \frac{\left\{1 + \left(\frac{dy}{dx}\right)^2\right\}^{\frac{3}{2}}}{\frac{d^2y}{dx^2}}$$

2. Prove the expression, in polar co-ordinates, for the perpendicular on the tangent to any curve

$$\frac{1}{p^2} = u^2 + \left(\frac{du}{d\theta}\right)^2$$

a. Hence show that

$$\frac{d^2u}{d\theta^2} + u = \frac{1}{p^3\ u^2}\ \frac{dp}{dr}$$

3. If $\frac{f(x)+\phi(x)}{f(x)-\phi(x)}$ be a maximum, show immediately that

$$\frac{f(x)}{\phi(x)} \text{ is a minimum.}$$

4. Given the angle C of a triangle; prove that $\sin^2 A + \sin^2 B$ is a maximum, and $\mathrm{Cos}^2 A + \mathrm{Cos}^2 B$ a minimum, when $A = B$.

5. State and prove Lagrange's Theorem for expanding any function of z in ascending powers of y, being given

$$z = x + y\,\phi(z)$$

where x and y are independent variables.

6. Find the value, when $x = 0$, of

$$\frac{tan\ x - sin\ x}{sin^3\ x}$$

7. Find by MacLaurin's Theorem, as far as x^4 the expansion $\log(1 + \sin x)$ in ascending powers of x.

8. Being given that $y = \left(x + \sqrt{x^2 - 1}\right)^m$

$$\text{prove that } (x^2-1)\frac{dy^2}{dx^2} + x\frac{dy}{dx} - m^2 y = 0$$

9. An arc of a circle revolves round a diameter passing through one extremity; show that the volume of the *spherical cap* thus generated is

$$\pi h^2 \left(a - \frac{h}{3}\right).$$

10. A solid sector is cut out of a sphere of 10 ft. radius by a cone, the angle of which is 120°; find the radius of the sphere whose solid contents are equal to those of the sector.

11. In the cardioid, $r = a(1 + cos\,\theta)$, prove that $s = 4a\,\frac{sin\,\theta}{2}$

12. Find, by integration, the area of a circle.

13. Integrate

$$\int \frac{dx}{cos^2\ x\ (a + b\ cos\ x)}; \qquad \int e^x\ \frac{1 + x\ log\ x}{\quad} dx$$

14. Integrate

$$\int cos^3\,\theta\ sin\ 2\theta\ d\theta; \quad \int cos^2\ x\ sin\ 4\ x\ dx; \quad \int x^3\ (log\ x)^2\ dx.$$

ANALYTIC GEOMETRY.

(*First Paper*)

THURSDAY, SEPT. 20TH :—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Find the equation of the *evolute* of the ellipse.

2. Explain the use and the geometric meaning of the eccentric angle in connection with the ellipse.

3. Find the polar equation of the parabola, the focus being the pole.

4. Any tangent to the parabola makes equal angles with the axis and with the focal radius vector.

5. Taking the asymptotes for axes show that the equation of the hyperbola can be put in the shape $x\,y = k^2$.

6. If an ellipse and hyperbola, having the same foci pass through the same point, they will cut each other at right angles.

7. The perpendicular from the centre on the tangent to an ellipse in terms of the angle (a) which it makes with the axis of x is given by

$$p^2 = a^2\ cos^2\ a + b^2\ pin^2\ a$$

8. If through two fixed points, O and O' any two parallel lines $O\,R$ and $O'r$ be drawn to cut a conic in the points $R,'\ R,''\ r,'\ r''$, then the ratio of the rectangles $O\,R'.\ O\,R''$ will be constant, whatever be the direction of these lines. $\overline{O'r'.\ Or''}$

9. Find the polar equation of a circle the pole being outside the circle.

10. Find the equation of the tangent at any point to a given circle.

11. Find the equation which will represent the lines bisecting the angles between the lines represented by the equations ¶ $Ax^2 + Bxy + Cy^2 = 0$

12. If the equation of a right line contain an indeterminate quantity in the first degree, the right line will always pass through a fixed point.

13. Find the condition that three right lines should meet in a point.

14. Two conic sections will be similar and similarly placed, if the co-efficients of the highest powers of the variables are the same in both, or only differ by a constant multiplier.

ANALYTICAL GEOMETRY.

(Second Paper)

THURSDAY, SEPTEMBER 20TH:—AFTERNOON, 2 TO 4.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Form the equation of a conic passing through the points where a given conic $S=0$, meets the axis, and through the point $x'\ y'$.

2. Show that the equation

$$l^2\ a^2 + m^2\ \beta^2 = n^2\ \gamma^2$$

denotes a conic with respect to which a, β, γ, are the sides of a self conjugate triangle.

3. If three conics have each double contact with a fourth, six of their chords of intersection will pass three by three through the same points.

4. If normals be drawn at the extremities of any focal chord, a line drawn through their intersection parallel to the axis major will bisect the chord.

5. Find the locus of the intersection of the perpendicular, from the centre of an ellipse on any tangent, with the radius vector from a locus to the point of contact.

6. Find the principal parameter of the parabola $9x^2 + 24\ xy + 16y^2 + 22\ x + 46\ y + 9 = 0$.

7. Any focal chord of an ellipse is a third proportional to the transverse axis and the parallel diameter.

8. Show that the equation of the circle circumscribing the triangle formed by the lines

$$a = o \quad \beta = o \quad \gamma = o$$

$$\text{is } \beta\ \gamma\ \sin \text{A} + \gamma\ a\ \sin \text{B} + a\ \beta\ \sin \text{C} = 0$$

9. Given vertex and vertical angle of a triangle and rectangle under sides; if one base angle describe a right line or a circle, find locus described by the other base angle.

10. Given the angles of a triangle, one vertex is fixed, another moves along a right line; find the locus of the third.

11. Given base and difference of base angles of a triangle, find locus of vertex.

12. Find what line is denoted bythe equation in trilinear co-ordinates

$$a\ \sin \text{A} + \beta\ \sin \text{B} + \gamma\ \sin \text{C} = 0$$

SCIENCE SCHOLARSHIP.

BOTANY (*General Paper*).

TUESDAY, SEPTEMBER 18TH:—MORNING, 9 TO 12.

Examiner,.....D. P. PENHALLOW, B. Sc.

1. Describe the perfect cell; the complete cell; the most simple form; the principal modifications.

2 Describe the principal methods of cell-formation.

3. The cell wall: give its composition, and the mode of formation and growth.

4. State the principal modifications of the cell wall with regard to physical and chemical properties, and the kinds of tissues resulting fom t hem.

5. Give an account of the cell contents, and enumerate in order those of first importance.

6. Enumerate the principal tissues of an exogenous stem, giving their relative positions and degree of importance.

7. What is a fibro-vascular bundle? State the structure of a typical form, and in what plants bundles are chiefly found.

8. Give the classification of plants as dependent upon structure and growth of the stem, and describe the structural differences.

9. Describe those organs most essential in the processes of assimilation, and the histological element most directly concerned.

10. Describe the sources of plant food and its character, and the general process of vegetable nutrition.

CANADIAN BOTANY.

TUESDAY, SEPTEMBER 18TH:—AFTERNOON, 2 TO 5.

Examiner,.....D. P. PENHALLOW, B. Sc.

1. Give the principal systems of classification, and the basis upon which each is founded.

2. Give an account of the principal modes of reproduction, and state their connection with systems of classification.

3. Classify the following, as far as possible:—*Compositæ; Gramineæ; Filices; Rosaceæ; Ranunculus repens; Lilium canadense; Equisetum hyemale; Euphorbiaceæ; Senecio vulgaris; Ranunculus repens; Magnoliaceæ; Pinus rigida.*

4. Mention some of the species and orders of Canadian plants which yield useful products (not fruit), and state the nature and value of these latter.

5. Describe some of the most important fruits of indigenous plants, and state their special value.

6. State the distinctions between the orders *Rosaceæ, Leguminosæ* and *Saxifragaceæ.*

7. What economical value have these orders?

8. In the following, indicate the special economic value of each, whether injurious or beneficial:—

Urticaceæ, Anacardiaceæ, Coniferæ, Compositæ, Gentianaceæ, Labiatæ, Solanaceæ, Valerianaceæ, Vitaceæ, Umbelliferæ.

9. State the affinities and distinctions of and between *Ranunculaceæ* and *Magnoliaceæ*, of *Cupuliferæ* and *Juglandaceæ.*

10. To whom are we primarily indebted for our principal systems of classification?

Examination in specimens, Thursday, September 20th, Morning 9 to 12.,

CHEMISTRY.

THURSDAY, SEPTEMBER 20TH :—AFTERNOON, 2 TO 5.

Examiner,.....B. J. HARRINGTON, B.A., PH D.

1. What elements constitute the Chlorine group? Point out the analogies that exist between them.

2. Name the substances indicated by the following formulæ, and state the class to which each of them belongs :

$$BaO,\ CaH_2O_2,\ N_2O_5,\ H_3PO_3,\ NaC_2H_3O_2,\ CH_4,\ CH_3OH.$$

3. What weight of H_2SO_4 can be obtained from 20 kilogrammes of iron pyrites containing 40 per cent. of sulphur?

4. Express by equations the chemical changes which take place in the production of Phosphorus from bones.

5. Name the metals of the Alkali group, and give their common properties. What two metals are often classed with them, and for what reason?

6. How is metallic Mercury obtained from Cinnabar? Give the properties and principal uses of the metal.

7. Explain the terms condensation ratio and product volume, as applied to compound gases.

8. Distinguish between fractional distillation and fractional condensation.

9. Give the formulæ and the properties of Starch, Cellulose and Glyrin.

10. Give fully the information conveyed by the following equations :

(1) $(C_2H_5)\ HO + H_2SO_4 = H(C_2H_5)SO_4 + H_2O.$

(2) $H(C_2H_5)SO_4 + (C_2H_5)\ HO = (C_2H_5)_2O + H_2SO_4$

LOGIC.

WEDNESDAY, 19TH SEPT. :—AFTERNOON, 2 TO 5.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Explain, and illustrate by an example, the two-fold meaning of terms in Extension and Intension.

2. Analyse into their three parts each of the following propositions :—

(*a*) All the metals are not denser than water;

(*b*) Few men know themselves;

(*c*) Comes something down with eventide;

(*d*) Nothing is beautiful except truth.

3. Explain, and illustrate by examples, the four-fold classification of propositions.

4. Explain the Quantification of the Predicate, and show how it affects the classification of propositions.

5. Give the several opposites of each of the following propositions:—

(*a*) All parallelograms have their opposite angles equal;

(*b*) Some muscles act without volition.

6. (*a*) Give a syllogism in Festino; (*b*) distinguish its several terms and propositions; and (*c*) reduce it to the first figure.

7. Name and analyse into syllogisms the following form of reasoning:—"Civilised society implies division of labour; what implies division of labour implies also exchange of products; what implies exchange of products implies further their equitable valuation; and what implies this implies some common measure of value like our money. Hence civilised society implies some common measure of value like our money.

8. Distinguish Logical and Material Fallacies.

9. Give an example (*a*) of the Fallacy of Composition, (*b*) of Ignoratio Elenchi, (*c*) of *Post hoc ergo propter hoc*.

10. Distinguish Inductions in Mathematics from those in Physical Science.

11. Explain fully what is meant by a *cause*.

12. Distinguish the Method of Difference from the Method of Agreement illustrating by an example of each.

FIRST YEAR EXHIBITIONS.

GREEK.

MONDAY, 17TH SEPT.:—MORNING, 9 TO 12.

Examiner,.....REV. DR. CORNISH.

1. Translate, Xenophon, Anabasis, Book II. :—

(*a*) Καὶ οἱ μὲν ἠγοῦντο, Κλέαρχος μέντοι ἐπορεύετο τὰς μὲν σπονδὰς ποιησάμενος, τὸ δὲ στράτευμα ἔχων ἐν τάξει, καὶ αὐτὸς ὠπισθοφυλάκει. καὶ ἐνετύγχανον τάφροις καὶ αὐλῶσιν ὑδατος πλήρεσιν, ὡς μὴ δύνασθαι διαβαίνειν ἄνευ γεφυρῶν· ἀλλ' ἐποιοῦντο διαβάσεις ἐκ τῶν φοινίκων οἱ ἦσαν ἐκπεπτωκότες, τοὺς δὲ καὶ ἐξέκοπτον. Καὶ ἐνταῦθα ἦν Κλέαρχον καταμαθεῖν ὡς ἐπεστάτει, ἐν μὲν τῇ ἀριστερᾷ χειρὶ τὸ δόρυ ἔχων, ἐν δὲ τῇ δεξιᾷ βακτηρίαν· καὶ εἴ τις αὐτῷ δοκοίη τῶν πρὸς τοῦτο τεταγμένων βλακεύειν, ἐκλεγόμενος τὸν ἐπιτήδειον ἔπαισεν ἄν, καὶ ἅμα αὐτός προσελάμβανεν εἰς τὸν πηλον ἐμβαίνων· ὥστε πᾶσιν αἰσχυνην εἶναι μὴ οὐ συσπουδάζειν.

(*b*) Ἀλλὰ καὶ λέγειν αὐτὸν ἔφασαν ὡς δέοι τὸν στρατιώτην φοβεῖσθαι μᾶλλον τὸν ἀρχοντα ἢ τοὺς πολεμίους, εἰ μέλλοι ἢ φυλακὰς φυλάξειν ἢ φίλων ἀφέξεσθαι ἢ ἀπροφασίστως ἰέναι πρὸς τοὺς πολεμίους. Ἐν μὲν οὖν τοῖς δεινοῖς ἤθελον αὐτοῦ ἀκούειν σφόδρα καὶ οὐκ ἄλλον ἤροῦντο οἱ στρατιῶται· καὶ γὰρ τὸ στυγνὸν τότε φαιδρὸν αὐτοῦ ἐν τοῖς προσώποις ἔφασαν φαίνεσθαι καὶ τὸ χαλεπὸν ἐῤῥωμένον πρὸς τοὺς πολεμίους ἐδόκει εἶναι, ὥστε σωτήριον καὶ οὐκέτι χαλεπὸν ἐφαίνετο. Ὅτε δ' ἔξω τοῦ δεινοῦ γένοιντο καὶ ἐξείη πρὸς ἄλλους ἀρχομένους ἀπιέναι, πολλοὶ αὐτὸν ἀπέλειπον· τὸ γὰρ ἐπίχαρι οὐκ εἶχεν, ἀλλ ἀεὶ χαλεπὸς ἦν καὶ ὠμός· ὥστε διέκειντο πρὸς αὐτὸν οἱ στρατιῶται ὥσπερ παῖδες πρὸς διδάσκαλον.

2. Translate the following short sentences giving any rule exemplified, or any special meaning, in the case of any particular words: —(*α*) δῆλος ἦν, ἐπιθυμῶν μὲν πλουτεῖν ἰσχυρῶς. (*β*) ἡμέρας καὶ νυκτὸς ἄγων ἐπὶ τοὺς πολεμίους. (*γ*) Ἄρχειν δὲ καλῶν μὲν καὶ ἀγαθῶν δυνατὸς ἦν. (*δ*) Οὗτοι ἔλεγον ὅτι Κῦρος τέθνηκεν, Ἀριαῖος δὲ πεφευγὼς εἴη. (*ε*) Δῆλον δὲ τοῦτο τῇ ὑστεραίᾳ ἐγένετο.

(*a*) Parse ἤσθιον, θέμενοι, ἐξεπλάγη, συνέμιξα, αἰσθάνοιτο, ἀφεικέναι. (*b*) Derive μνησικακήσειν, βοηθήσων, μισθοδοσίας, πανουργία, ναυσίπορος.

4. Translate :—(*c*) Iliad VI., vss. 305-331.

(*a*) Give as carefully as you can the force of the particles :—*δή, τοί, ἄρα, μήν, μέν* and *δέ*. (*b*) Explain the phrase *δια θεάων*. (*c*) Parse and construe *καλὰ* in 326 and *ἀνα* in 381. (*d*) Explain the Genitives *στυγεροῦ πολέμοιο* and *πυρὸς δηίοιο*. (*e*) Write down the scale and scan the first four vss. of ext. (*c*)

6. Translate, Demonsthenes, Olynthiacs :—

(*d*) *δεῖ δὴ ταῦτα ἐπανέντας καὶ ὑμῶν αὐτῶν ἔτι καὶ νῦν γενομένων κοινὸν καὶ τὸ βουλεύεσθαι καὶ τὸ πράττειν ποιῆσαι. εἰ δέ τοῖς μέν, ὥσπερ ἐκ τυραννίδος, ὑμῶν ἐπιτάττειν ἀποδώσετε, τοῖς δ' ἀναγκάζεσθαι τριηραρχεῖν, εἰσφέρειν, στρατεύεσθαι, τοῖς δὲ ψηφίζεσθαι κατά τούτων μόνον, ἄλλο δὲ μηδ' ὁτιοῦν συμπονεῖν, οὐχὶ γενήσεται δεόντων ὑμῖν οὐδὲν ἐν καιρῷ· τὸ γὰρ ἠδικημένον ἀεὶ μέρος ἐλλείψει· εἶτ' ὑμῖν τούτους καλάζειν ἀντὶ τῶν ἐχθρῶν περιέσται· λέγω δὴ κεφάλαιον, πάντας εἰσφέρειν ἀφ' ὅσων ἕκαστος ἔχει, τὸ ἴσον πάντας ἐξιέναι κατὰ μέρος, ἕως ἂν ἅπαντες στρατεύσησθε· πᾶσι τοῖς παριοῦσι λόγον διδόναι, καὶ τὰ βέλτιστα, ὧν ἂν ἀκούσητε, αἱρεῖσθαι, μὴ ἃ ἂν ὁ δεῖνα ἢ ὁ δεῖνα εἴπῃ· κἂν ταῦτα ποιῆτε, οὐ τὸν εἰπόντα μόνον παραχρῆμα ἐπαινέσεσθε, ἀλλὰ καὶ ὑμᾶς αὐτοὺς ὕστερον, βέλτιον τῶν ὅλων πραγμάτων ὑμῖν ἐχόντων.*

7. Translate as accurately as you can the following extracts, adding an explanatory grammatical note where you deem it proper :—

δέδοικα, ὦ ἄνδρες Ἀθηναῖοι, μὴ τὸν αὐτὸν τρόπον, ὥσπερ οἱ δανειζόμενοι ῥᾳδίως ἐπὶ τοῖς μεγάλοις τόκοις μικρὸν εὐπορήσαντες χρόνον ὕστερον καὶ τῶν ἀναγκαίων ἀπέστησαν, οὕτω καὶ ἡμεῖς, ἐπὶ πολλῷ φανῶμεν ἐῤῥᾳθυμηκότες καὶ ἅπαντα πρὸς ἡδονὴν ζητοῦντες, πολλὰ καὶ χαλεπὰ ὧν οὐκ ἠβουλόμεθα ὕστερον εἰς ἀνάγκην ἐλθωμεν ποιεῖν, καὶ κινδυνεύσωμεν περὶ τῶν ἐν αὐτῇ τῇ χώρᾳ.

8. Parse, pointing out the root of each :—*ἐπανέντας, ἐσκεμμένος, ἐγνωκότας, πεφηνέναι, ηὐξήθη, προῄρηται, κομιεῖσθε, ἤρθη, συμπλακῇ, ᾠήσετε, ἠνώχλει.*

Give the meanning, and also the etymology, of the following :—*ἀκρασίαν, συγκεκροτημένοι, πεζέταιροι, φωρᾶται, ἀνεχαίτισε, πεφενάκικεν, ἀκεραίου, ὦ τάν, ἐλλείματα, ἀφορμάς, προσθήκης.*

10. Give a short account of the events connected with the delivery of these orations, mentioning dates.

LATIN.

MONDAY, SEPT. 17TH :—AFTERNOON, 2 TO 5.

Examiner,..... REV. DR. CORNISH.

1. Translate:—(*a*) Pro Archia, Chap, III., §§ 5 and 6.

2. (*a*) "*Italia* plena:"—What part of Italy in particular? (*b*) *Tranquilitatem* rei publicæ:—give the dates of the period here referred to. (*c*) *Civitate, cognitione, hac celebritate, Mario consule, temporibus illis*:—explain these uses of the *Ablative*, respectively. (*c*) *Posset*:—What use of the Subjunctive?

3. Translate and explain the following expressions:—(*a*) quæstio legitima. (*b*) natus est loco nobili. (*c*) nactus est primum consules eos. (*d*) audiebatur a M. Æmilio. (*e*) litterarum memoriam flagitare. (*f*) resignare testamentum. (*g*) beneficium legis.

4. Derive:—tropæum, exsilium, acroama, manubiæ, giving any necessary explanation; and state the meaning and application of the word togatus."

5. Translate:—(*b*) Horace, Odes, Bk. I., ode 22.

6. (*a*) Scan the first stanza of (*b*), naming the metre and giving the schemes. (*c*) Explain the following references:—Mauris jaculis, Syrtes aestuosas, fabulosus Hydaspes, Jubae tellus.

7. Translate:—Virgil, Aeneid, bk. V. (*c*) vss. 104 to 123. (*d*) vss. 711 to 718.

8. Show the grammatical construction in exts. (*c*) and (*d*) of:—(1) visuri. (2) pars certare parati. (3) palmae pretium victoribus. (4) divinae stirpis. (5) consiliis socium. (6)quos pertaesum * * * tuarum est.

9. Parse carefully the following verbs, giving the principal parts:—excierat, perfusae, deprensus, retexerit, salvete, submersum, inclusa, obnixi, haesit, oblitus, amplexus, refixa.

10. Write down the *Nom. Sing.* and *Plu.* of:—litore, mensibus, aggere numero, ore, pateris, remige, mole, puppibus, sequacibus.

GRAMMAR AND COMPOSITION.

THURSDAY, SEPTEMBER 20TH:—AFTERNOON, 2 TO 5.

Examiner,.....REV. DR. CORNISH.

1. (*a*) Distinguish between the *Root* and *Stem* of a word. (*b*) Point out the stem of ὄρνις, γάλα, ἀηήρ, κόραξ, γυνή, παῖς, respectively. (*c*) Write down the *Dative Plural* of these words (*d*) Give the Greek for;—"the same man;" "the boy himself;" "we two;" "ye two;" "my father;" "your (plu.) mother;" "their brother."

2. (*a*) What are the Augments? Give the chief rules respecting them. (*b*) Write down the Imperfect (1st Sing. Ind.) of:—ὁράω, αἱρέω, ἕπομαι, ἐάω. (*c*) Derive and define the term Aorist. When would you employ the Aorist, Perfect and Imperfect, respectively? (*d*) Enumerate the Tense-stems, and the tenses formed from each. How do you find the stem of a verb?

3. (*a*) How many declensions are there in Latin, and how are they severally characterized and distinguished? (*b*) How many classes of Numerals are there? Write down the first five numerals in all classes.

4. (*a*) Decline (in combination) in both singular and plural:—*uterque consul, audax facinus, nix alba, altera domus.* (*b*) Write down the comparative and surperlative of *pulcher, facilis, nequam, frugi, ultra, extra.* (*c*) Give the Perfect Ind. (1st Sing), Supine, and Pres. Infinitive of *edo, lavo, vendo, audeo, fingo, figo.* (*d*) Give the Future Infinitives, Active and Passive, of *deligo, do, exerceo.*

5. (*a*) Express in Latin:—"At Rome, at Carthage, at Gades, at Athens." What is the case used? (*b*) Assign their respective cases to the following:—*patiens, memor, captus, egeo, parco, noceo.* (*c*) Explain the formation of the following compounds:—aufero, occupo, cogo, collega, prasidium, securus.

6. Translate into Latin:—(A) (1) The soldier was struck on the head. (2) The father sent his son to Rome to be educated. (3) The consuls being slain, the three armies obeyed Octavius alone. (4) They sent envoys to the general to sue for peace. (5) He said that he had come for the purpose of seeing the city. (Express the final clause of (4) and (5) in as many ways as you can.) (6) The tyrant Dionysius, expelled from Syracuse, taught boys at Corinth. (7) I am afraid he will come. (8) I was afraid he would not come. (9) The Samnites sent the Roman army under the yoke. (10) The enemy was routed and put to flight.

(B) After this king Porsenna made war against the Latins, and his army was beaten and fled to Rome; and the Romans received them kindly, and took care of those who were wounded, and sent them back safe to king Porsenna. For this the king gave back to the Romans all the rest of their hostages whom he had still with him, and also the land which they had won from the Veientians. So Tarquinius, seeing that there was no more hope of aid from king Porsenna, left Clusium and went to Tusculum of the Latins.

ARITHMETIC AND ALGEBRA.

TUESDAY, SEPTEMBER 18TH:—AFTERNOON, 2 TO 5.

Examiner.....REV. PRINCIPAL LOBLEY, D.C.L.

1. Simplify $(1\frac{1}{3} + 2\frac{2}{7})\left(\frac{5\frac{1}{16}}{4\frac{6}{7} + 1\frac{1}{4}}\right)$

2. Subtract $13\cdot\dot{2}4\dot{7}$ from $15\cdot0\dot{2}\dot{5}$.

3. Multiply 25 acres, 2 roods, 15 poles by $29\frac{3}{5}$.

4. By mixing 12 doz. of wine at \$21 per dozen with 60 dozen at \$12 and selling the whole at \$18 per dozen, what percentage of profit is obtained?

5. At what rate of interest will \$630 amount to \$756 in 5 years?

6. Find the present value of \$6722 due at the end of 5 years; interest at 4 per cent. per annum.

7. Resolve into factors $8x^3 - 27y^3$; $x^2 - 8x - 9$.

8. Solve the equations

(i.) $$\frac{7x+20}{8} - \frac{3\ (3x+4)}{16} = \frac{3x+1}{10} - \frac{29-8x}{20}$$

(ii.) $$\frac{a\ (d^2+x^2)}{dx} = ac + \frac{ax}{d}$$

9. Find the G. C. M. of $x^3 - 8x + 3$ & $x^6 + 3x^5 + x + 3$

10. Solve the equations

$$\left.\begin{aligned} 2x - \frac{y-3}{5} &= 4 \\ 3y + \frac{x-2}{3} &= 8 \end{aligned}\right\}$$

11. Rationalise the denominators of

$$\frac{4}{\sqrt{5}-1}\ ,\qquad \frac{3+\sqrt{5}}{3-\sqrt{5}}$$

12. Solve the equation $\frac{x}{x+1} + \frac{x+1}{x} = \frac{13}{6}$

13. Prove that the sum of n terms of an Arithmetical Progression, of which the first term is a and the common difference b is

$$\frac{n}{2}\ (2a + \overline{n-1}.\ b)$$

14. Insert 6 Harmonical Means between 3 and $\frac{6}{13}$.

GEOMETRY.

TUESDAY, SEPTEMBRR 18TH:—MORNING, 9 TO 12.

Examiner.....REV. PRINCIPAL LOBLEY, D.C.L.

1. In any right-angled triangle the squares described upon the sides containing the right angle are together equal to the square upon the side subtending the right angle.

If two exterior angles of a triangle and the third interior angle be bisected, the bisecting straight lines shall all meet in one point.

2. If a straight line be bisected and produced to any point, the rectangle contained by the whole line thus produced and the part produced, together with the square on half the line bisected, shall be equal to the square on the line made up of the half and the part produced.

Construct a rectangle which shall be equal to a given square, and the difference of whose adjacent sides shall be equal to a given straight line.

3. Two straight lines in a circle which do not bothpass through the centre cannot bisect one another.

4. In a circle the angle in a semicircle is a right angle, the angle in a segment greater than a semicircle is less than a right angle, and the angle in a segment less than a semicircle is greater than a right angle.

If a circle be described upon one of the equal sides of an isosceles triangle as diameter, its circumference shall bisect the base.

5. Construct an isosceles triangle such that each of the angles at the base shall be equal to twice the vertical angle.

Extra Questions.

6. The straight line bisecting the vertical angle of any triangle divides the base into segments which are proportional to the sides of the triangle.

7. Similar triangles are to one another in the duplicate ratio of their homologous sides.

FIRST AND SECOND YEARS.

ENGLISH GRAMMAR.

WEDNESDAY, SEPTEMBER 19TH:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

(You are required to answer the questions set for Matriculation into the Second Year and also those that follow.)

17. Classify Adverbs, and give two examples of each class.

18. At what periods did Latin words find their way into English? Illustrate.

19. What do you understand by a dialect? Give examples (not more than three) of dialectic words.

20. Shew how words similar in form may be distinguished by accent.

ENGLISH LITERATURE AND COMPOSITION.

WEDNESDAY, SEPT. 19TH:—AFTERNOON, 2 TO 5.

Examiner,.....CHAS. E. MOYSE, B.A.

A. Shakespeare, *Julius Cæsar*.

1. Give the substance of Brutus's remarks in reply to these words of Cassius. "Let Antony and Cæsar fall together."

2. What was Calpurnia's dream? How did Decius Brutus explain it?

3. To what does Cæsar compare his constancy?

4. How does Antony prove that Cæsar was unambitious?

5. Why does Cassius wish to delay battle and Brutus to engage at once? Where is Philippi?

6. What portent makes Cassius despair of success?

What was the end of Cassius?

7. Give the outline of the scene in which Brutus dies.

8. Comment on:—since the great flood; he plucked me off; the Genius and the mortal instruments; addressed; the Lupercal; objects, orts and imitations?

9. Notice any five apparent irregularities in syntax which you have observed in the play?

B. Write an Essay not more than two pages long on one of the following subjects:—

A Cathedral.

The Electric light.

Illustrated Newspapers.

SECOND YEAR EXHIBITIONS.

GREEK.

MONDAY, SEPTEMBER 17TH:—MORNING, 9 TO 12.

Examiner.....REV. DR. CORNISH.

1. Translate;—(A) Herodotus, Bk. VII. Chap. 211.

2 (*a*) Distinguish between the force of ὡς and ἅτε in the above ext. (*b*) Characterise the dialect used by Herodotus, and point out in ext. (A) forms peculiar to it, and give their equivalents in Attic. (*c*) Give the etymology and exact meaning of:—*συνεκεράσαντο, καραδοκήσοντα, ἀνεκώχευον.*

3. Translate, adding an explanatory note where necessary, the following extt.:—(*a*) *σὺ γὰρ αὐτῶν τὰς διεξόδους τῶν βουλευμάτων.* (234). (*b*) *ἀνέλαβε πᾶσαν τὴν ἐπενεχθεῖσαν οἱ αἰτίην* (231). (*c*) *ὅτι πολλοὶ μὲν ἀνθρωποι εἰεν ὀλίγοι δὲ ἄνδρες* (210). (*d*) *ἀκούσας δὲ, γελωτά με ἔθευ λέγοντα τάπερ ὥρων ἐκβησόμενα πρήγματα ταῦτα.*

4. Translate:—(B) Hellenics, Bk. II., Chap. 3, §§ 11-14, inclusive.

5. Explain the syntax of:—(*a*) *ἐφ' ᾧτε συγγράψαι νόμους * * πολιτεύσαιντο.* (*b*) *αὐτῶν κατεψηφίζετο.* (*c*) *ξυνήδεσαν ἑαυτοῖς μὴ ὄντες τοιοῦτοι.* (*d*) *τῶν φρουρῶν τούτου ξυμπεμποντος αὐτοῖς.*

6. Write explanatory notes on:—(1) *ἀπὸ συκοφαντίας ξῶντας.* (2) *τοὺς καλοὺς καὶ ἀγαθούς.* (3) *ὑπῆγον θανατου.* (4) *ὥσπερ τυραννίδος.* (5) *τῶν μετοίκων.* (6) *ἡ Πάραλος.*

7. Translate:—(C) Iliad, Bk. XVIII.:—vss. 127-137 and 490-508.

8. Parse carefully the following:—*δόμεν, ἰέσθην, ἐλέσθαι, ἠγίνεον, γέντο, ἔπραθον, ἔτλην, λίπ', πιθώμεθα, ὦρσε.*

6. Give the derivation and meaning of:—*περικλυτός, τίπτε, δαιδαλέον, ἀμφιγυήεις, βοῶπις, βίηφι, δυσηχέος, ἀργοί, πυκινήν, ἐπήτριμοι.*

10. Write down the name and scale of the metre, and scan the first five vss. of ext. (C) (*b*) A short account of Homer and the Homeric Poems.

LATIN.

MONDAY, SEPTEMBER 17TH:—AFTERNOON, 2 to 5.

Examiner.....Rev. Dr. CORNISH.

1. Translate:—(A) Virgil, Æneid, Bk. VII., vss. 783-802.

2. Explain the following:—(*a*) Multa flavus arena. (*b*) Erato. (*c*) Alta Albunea. (*d*) Laurentis Pici. (*e*) Quirinali lituo paruaque trabea. (*f*) Daedala Circe. (*g*) Ampsancti valles.

3. Translate the following, and explain the construction:—(*a*) Magni ipse agminis instar. (*b*) Saevus ubi Orion hibernis conditur undis. (*c*) Illa vel intactae segetis per summa volaret Gramina, nec teneras cursu laesisset aristas. (*d*) Induerat Circe in voltus ac terga ferarum. *e*) Falli furentem vipeream animam.

4. Translate:—(B) Horace, Odes III., Ode 24, vss. 35-64.

5. (*a*) State the subject of the above Ode. (*b*) Name the metre and scan the first four vss. of ext (B). (*c*) Explain:—*ingenuus puer; vetita alea.*

6. (*a*) Translate and write short explanatory notes on the following from Ode 27:—(1) Parrae recinentis. (2) Mannus. (3) Oscinem corvum. (4) Laevus picus. (5) Albus Iapyx. (*b*) Comment on the syntax of:—(1) Teneræ succus defluat praedae. (2) Abstineto irarum calidaeque rixae. (3) Uxor invicti Jovis esse nescis.

7. Translate:—(C) Livy, Bk. XXI., Chap. 20.

8. (*a*) What reasons does Livy give for regarding the Second Punic War as the greatest ever waged? (*b*) Explain the following historical references:—(1) Perfecto Africo bello. (2) Sicilia Sardiniaque amissa. (3) Factionis Barcinae. (4) Sagunto excisa. (*c*) Alpium transitus:—Name these;—by which did Hannibal cross? (*d*) Define the geographical position, giving modern names where you can, of:—Saguntum, Carthago nova, Eryx, Aegates insulae, Gades, Numidae, Mauri, Etovissa, Saluvii, Ruscinonem.

9. Give the meaning and derivation of:—vigiliae, custodias, stationes, proelium, provincia, agmen, acies, exercitus, catapultæ, ballistae.

10. Translate:—(D) Cicero, Epistola 28:—

M. CICERO PROCOS S. D. APPIO PULCHRO IMP.

Cum et contra voluntatem meam et praeter opinionem *accidisset*, ut mihi cum imperio in provinciam proficisci necesse *esset*, in multis et variis molestiis cogitationibusque meis haec una consolatio occurrebat, quod neque tibi amicior, quam ego sum, quisquam *posset* succedere neque ego ab ullo provinciam accipere, qui *mallet* eam quam maxime mihi aptam explicatamque tradere. Quod si tu quoque eandem de mea voluntate erga te spem

habes, ea te profecto numquam fallet. A te maximo opere pro nostra summa coniunctione tuaque singulari humanitate etiam atque etiam buaeso et peto ut, quibuscumque rebus poteris—poteris autem plurimis—*prospicias* et *consulas* rationibus meis. Vides ex senatus consulto provinciam esse habendam: si eam, quod eius facere potueris, quam expeditissumam mihi tradideris, facilior erit mihi quasi decursus mei temporis. Quid in eo genere efficere *possis*, tui consilii est: ego te, quod tibi veniet in mentem mea interesse, valde rogo. Pluribus verbis ad te *scriberem*, si aut tua humanitas longiorem orationem exspectaret aut id fieri nostra amicitia pateretur aut res verba desideraret ac non pro se ipsa loqueretur. Hoc *velim* tibi *persuadeas*, si rationibus meis provisum a te esse intellexero, magnam me ex eo et perpetuam voluptatem esse capturum.

11. Explain the several uses of the Subjunctive italicised in ext. (D).

HISTORY AND GRAMMAR.

THURSDAY, SEPTEMBER 20TH:—AFTERNOON, 2 TO 5.

Examiner,..... .....REV. DR. CORNISH.

(A) 1. Name the original tribes of the Greek people, and point out to what tribes the people of Attica and Sparta severally belonged. (*b*) State what you hold to have been the leading characteristics of these two people, respectively.

2. Give a short account, with dates, of the public events in which the following persons played an important part severally:—(1) Pisistratus; (2) Mardonius; (3) Pericles; (4) Lysander.

3. (*a*) Give an account of the foundation of Rome, and of its first form of government. (*b*) By what events was this form of government brought to an end?

4. (*a*) Name the most important wars by which Rome gained the supremacy over the various states of Italy. (*b*) At what date was her sovereignity over the whole peninsula established?

(B) 1. Define and illustrate by example what is meant by *Tmesis Anastrophe, Zeugma, Arsis, Thesis.*

2. (*a*) What is meant by Augment and Reduplication, and what are they used to denote? (*b*) With what Moods are εἰ and ἐάν severally used. (*c*) Write down the Aorist and Future (1st. Sing.) of:—*βούλομαι, ἐλαίνω, διαφθείρω, εὑρίσκω, φέρω.* (*d*) Show how the relative position of the Article with other Pronouns modifies the meaning of statements.

3. From what verbs do you deduce the following:—ultus, adultus, cretus, stratus, occultus, ademptus, pactus, passus? Do any belong to more than one verb?

4. (*a*) Mark the quantity of the penultimate in the following:—*Maritimus*, *vetitus*, *progredi*, *statuerimus*, *velimus*, *possumus*. Also of the final vowel of *intera*, *bene*, *hodie*, and *cito*.

5. Give a list of Latin verbs governing the Dative case; also of those governing the Ablative.

6. Translate into Latin, with different constructions:— "when his work was over he returned home to supper." (*b*) Correct the following sentences:— (*a*) Urbs non parcenda est. (*b*) Mendax haud creditur. (*c*) Missus est viam explorare. (*d*) Quid me fiet parvum facio.

(C) Translate into Greek:—(1) Socrates, the philosopher of Athens, said many wise things, but his ennemies persecuted him to death. (2) One who admires Solon will not admire the wise men of the present day. (3) The Athenians tarried there may days, and ravaged the whole country and did much harm to the people. (4) The soldiers marched out of the city and advanced a hundred stadia into the enemy's country.

2. Translate into Latin:—

Hercules once came into Italy from Spain, when after killing King Geryon he had carried off his oxen, which were of remarkable beauty. Driving these oxen before him he crossed the river Tiber by swimming, and lay down in a grassy spot near the bank, in order to refresh his cattle with rest and good pasture, being himself also somewhat wearied with the journey. There being overtaken with sleep, a shepherd, inhabitant of that spot, by name Cacus, a man of formidable strength, captivated by the beauty of the oxen, determined to drive them away. He was well aware, however, that he drove the herd into his cave, the footmarks themselves would bring their owner to the spot. So he drew the oxen into the cave backwards by their tails. Hercules at the dawn of day roused himself from sleep, and when he had surveyed the herd he noticed that a portion were absent, and at once proceeds to the nearest cave if by chance their footsteps led in that direction. Cacus endeavored by force to prevent his entering, but fell dead with a blow from the club of Hercules.

MATHEMATICS.

TUESDAY, SEPTEMBER 18TH :—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Construct a rectilinear figure equal to a given one and similar to another.

2. If two triangles have one angle of the one equal to one angle of the other; and the sides about two other angles proportionals, and if each of the remaining angles be either less or not less than a right angle, the triangles shall be similar.

3. In a given circle inscribe a regular quindecagon.

4. Cut a given line so that the rectangle under the whole and one part shall be equal to the square of the other.

5. In a plane triangle prove $\sin \frac{1}{2} A = \sqrt{\frac{(s-b)\ (s-c)}{b\ c}}$

6. Prove $\sin 4\ A = 2 \sin 2\ A \operatorname{Cos} 2\ A$; $\operatorname{Cos} A = 1 - 2 \sin^2 \frac{1}{2} A$

$$\tan (A + B) = \frac{\operatorname{Cot} A + \operatorname{Cot} B}{\operatorname{Cot} A \operatorname{Cot} B - 1}$$

7. Find the number of seconds in the unit of circular measure.

8. Trace the changes of sign in the sine of an angle increasing from 10 to 360°.

9. Solve the equations :—

$$m\ q\ x^2 - mnx + pqx \quad np = 0\ ;$$

$$4x - 5y + mz = 7x - 11y + 1\ nz = x + y + pz = 3\ ;$$

$$\frac{1}{\sqrt{1-x} + 1} + \frac{1}{\sqrt{1+x} - 1.} = \frac{1}{x}$$

10. Find two numbers in the ratio of 4 to 5, such that if 6 be added to the greater number, and 1 to the smaller, the square roots of the resulting numbers shall differ by 1.

11. Simplify $5\sqrt{3} \times 7\sqrt{\frac{8}{3}} \times \sqrt{2}$.

12. Divide $x - a$ by $x^{\frac{1}{n}} - a^{\frac{1}{n}}$.

MATHEMATICS.

TUESDAY, SEPTEMBER 18TH:—AFTERNOON, 2 TO 5.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. By *reciprocaing* the theorem that the three perpendiculars of a triangle meet in a point, prove that:—If any point whatever be joined to the vertices of a triangle, and perpendiculars drawn to those joining lines, they will meet the sides opposite to the corresponding vertices in three points in the same straight line.

2. Any two points subtend at the centre of a circle an angle equal to that between their polars.

3. If two circles cut one another orthogonally, any straight line drawn through the centre of either and meeting both circles is cut harmonically by the two circumferences.

4. On the sides of a triangle produced through the ends of the base, parts are taken in a given ratio, and their extremities joined to the remote ends of the base: find the locus of the intersection of the joining lines.

5. If two alternate rays of an harmonic pencil contain a right angle, they bisect the angles contained by the other two rays.

6. Through a given point within an angle, draw a straight line cutting the sides of the given angle, so that the rectangle under the intercepts between the point and the sides of the given angle, may be equal to a given rectangle.

7. The rectangle under the diagonals of a quadrilateral inscribed in a circle is equal to the rectangles under its opposite sides.

8. Inscribe a rhombus of a given species in any triangle.

9. State and prove Sturm's Theorem.

10. Apply Sturm's theorem to the equation

$$x^4 + 2x^2 - 4x + 10 = 0$$

11. The roots of the following equation are in arithmetical progression, find them

$$x^4 - 8x^3 + 14x^2 + 8x - 15 = 0$$

12. Solve the equation

$$2x^4 - 5x^3 + 6x^2 - 5x + 2 = 0$$

13. Show that the equation,

$$x^7 - 2x^4 + x^3 - 1 = 0$$ has at least four imaginary roots.

14. The number of combination of $n + 1$ things 4 together is 9 times the number of combinations of n things 2 together, find n.

15. If $2\frac{1}{4}$, 1 be the first and third terms of a geometrical progression, find the sum of the series *ad infinitum*.

16. Expand $\sqrt{1 + x}$ by the method of indeterminate co-efficients.

ENGLISH LITERATURE.

Shakespeare: *As You Like It*; Trench: *Study of Words*.

WEDNESDAY, SEPTEMBER 19TH:—AFTERNOON, 2 TO 5.

Examiner,.....CHAS. E. MOYSE, B.A.

1. What passes between Oliver and Orlando at their first meeting? Who is their father?

2. How did Touchstone prove that the knight was not forsworn?

3. Give Jacques' account of his meeting the Fool.

4. Give Oliver's account of his being seen in the forest by Orlando, and the consequences.

5. Notice peculiarities of Elizabethan English in regard to verbs and pronouns, and quote from the play in illustration.

6. What does Trench say regarding the language of savage tribes? Notice some examples by which he supports his statements.

7. Explain three personal names; three names of places and three of beasts, which shew the poetry in words.

8. What causes the creation of new words?

9. What does Trench think of such scientific words as *atavism isothermal?*

10. What does Trench understand by synonym? What does he think of Johnson's Dictionary?

11. Give some etymologies "at random," also words connected with *sheer*.

CHEMISTRY.

THURSDAY, SEPTEMBER 20TH :—AFTERNOON, 2 TO 5.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. Distinguish between supporters of combustion and combustibles, and show that these terms have only a relative significance.

2. How much Nitric Acid can be obtained from 40 kilos of Chili Saltpetre? How much Caustic Potash would be required to exactly neutralize the acid produced?

3. How is metallic Antimony obtained from the Sulphide? Give its properties and uses.

4. Describe the preparation of pure Carbonic Oxide. Why is it termed a reducing agent?

5. What are Ethers? Describe the preparation of one of them. To what inorganic compounds do they correspond?

6. Explain the constitution of the Mercaptans and Glycols.

7. Give the formula of Glycerin. Whence is it derived, and what are its properties?

8. Give the names of the following compounds, and describe two of them:

$$C_7H_7N,\quad CHCl_3,\quad C_{10}H_{16}O,\quad C_2H_6O,\quad C_6H_6O$$

9. Name the principal Vegetable Acids, and give the sources from which they are derived.

10. Give the formulæ of Phosphoric Acid, Acetic Acid, Sucrose, Benzol and Silica.

FRENCH.

SEPTEMBER 20TH :—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M.A., B.C.L.

1. Translate into English :—

L'alouett eet ses pétits, avec le maître d'un champ.

Ne t'attends qu'à toi seul ; c'est un commun proverbe.
Voici comme Esope le (*a*) mit (*b*)
En crédit :

Les alouettes font leur nid
Dans les blés quand ils sont en herbe,
C'est-à-dire environ le temps
Que tout aime et que tout pullule dans le monde,
Monstres marins au fond de l'onde,
Tigres dans les forêts, alouettes aux champs.
Une pourtant de ces dernières
Avait laissé passer la moitié d'un printemps
Sans goûter le plaisir des amours printanières
A toute force enfin elle se résolut (*c*)
D'imiter la nature et d'être mère encore.
Elle bâtit un nid, pond, couve et fait éclore
A la hâte : le tout alla du mieux qu'il (*d*) put (*e*).

LAFONTAINE, *Livre IV, Fable XXII.*

a, *d*. Parse *le* and *il*.

b, *c*, *e*. Write in full all the tenses of the Subjunctive mood of *mit*, *se résolut* and *put*.

3. Write in the plural *aïeul*, *ciel*, *verrou*, *caillou*, *vaisseau*, *noix*, and in the singular, *baux*, *coraux*, *chapeaux*, *fils*.

4. Write in the feminine *net*, *complet*, *pécheur*, *flatteur*, *chanteur*, *cher*, *jumeau*.

5. How do you form the *comparatives of adjectives* in French?

Give three examples.

6. What do you call primitive tenses? Are the *Preterite definite*, *Subjunctive present* and *Future past* primitive or derivative? If primitive what tenses do they form; if derivative from what tenses are they formed?

2. Translate into English :—

Toinette.—Vous avez beau raisonner Monsieur est frais émoulu (*a*) du collège, et il vous donnera toujours votre reste (*b*). Pourquoi tant résister, et refuser la gloire d'être attachée au corps de la Faculté?

Molière, Le médecin malgré lui.

a What is the litteral of frais *émoulu* and *donnera votre reste?*

7. Translate into French :—

People who have little to do are very great talkers; the less one thinks, the more one speaks. The undertaking is difficult, but you will succeed in it. We shall collect in ancient history important and valuable facts. He who serves well his country has no need of ancestors. I go out every morning before breakfast. He promises enough, but he seldom keeps his word. He was in great dejection of mind; but the news which he has just received have revived him.

CHRISTMAS EXAMINATIONS, 1883.

CLASSICS.

FIRST YEAR.

GREEK.—XENOPHON.—HELLENICS, BOOK. I.

WEDNESDAY, DECEMBER 12TH :—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL. D.

1. Translate :—

(A) Οἱ δὲ Ἀθηναῖοι ἀνταναγόμενοι ἐναυμάχησαν περὶ Ἄβυδον κατὰ τὴν γῆν μέχρι δείλης ἐξ ἑωθινοῦ. καὶ τὰ μὲν νικώντων, τὰ δὲ νικωμένων, Ἀλκιβιάδης ἐπεισπλεῖ δυοῖν δεούσαις εἴκοσι ναυσίν· ἐντεῦθεν δὲ φυγὴ τῶν Πελοποννησίων ἐγένετο πρὸς τὴν Ἄβυδον· καὶ ὁ Φαρνάβαζος παρεβοήθει, καὶ ἐπεισβαίνων τῷ ἵππῳ εἰς τὴν θάλατταν, μέχρι δυνατὸν ἦν ἐμάχετο, καὶ τοῖς ἄλλοις τοῖς αὐτοῦ ἱππεῦσι καὶ πεζοῖς παρεκελεύετο. Συμφράξαντες δὲ τὰς ναῦς οἱ Πελοποννήσιοι καὶ παραταξάμενοι πρὸς τῇ γῇ ἐμάχοντο. Ἀθηναῖοι δὲ ἀπέπλευσαν, τριάκοντα ναῦς τῶν πολεμίων λαβόντες κενὰς καὶ ἃς αὐτοὶ ἀπώλεσαν κομισάμενοι, εἰς Σηστόν.

(B) Τοῖ δὲ Συρακοσίοις καὶ Σελινουσίοις κρατίστοις γενομένοις ἀριστεῖα ἔδωκαν καὶ κοινῇ καὶ ἰδίᾳ πολλοῖς, καὶ οἰκεῖν ἀτέλειαν ἔδοσαν τῷ βουλομένῳ ἀεί· Σελινουσίοις δέ, ἐπεὶ ἡ πόλις ἀπωλώλει, καὶ πολιτείαν ἔδοσαν. οἱ δ' Ἀθηναῖοι τοὺς νεκροὺς ὑποσπόνδους ἀπολαβόντες ἀπέπλευσαν εἰς Νότιον, κἀκεῖ θάψαντες αὐτοὺς ἔπλεον ἐπὶ Λέσβου καὶ Ἑλλησπόντου. ὁρμοῦντες δὲ ἐν Μηθύμνῃ τῆς Λέσβου εἶδον παραπλεούσας ἐξ Ἐφέσου τὰς Συρακοσίας ναῦς πέντε καὶ εἴκοσι· καὶ ἐπ' αὐτὰς ἀναχθέντες τέτταρας μὲν ἔλαβον αὐτοῖς ἀνδράσι, τὰς δ' ἄλλας κατεδίωξαν εἰς Ἔφεσον. καὶ τοὺς μὲν ἄλλους αἰχμαλώτους Θράσυλλος εἰς Ἀθήνας ἀπέπεμψε πάντας. Ἀλκιβιάδην δὲ Ἀθηναῖον, Ἀλκιβιάδου ὄντα ἀνεψιὸν καὶ συμφυγάδα, ἀπέλυσεν. ἐντεῦθεν δὲ ἔπλευσεν εἰς τὴν Σηστὸν πρὸς τὸ ἄλλο στράτευμα. ἐκεῖθεν δὲ ἅπασα ἡ στρατιὰ διέβη εἰς Λάμψακον.

(C) Οἱ δὲ ταῦτ' ἐπῄνουν καὶ ἐκέλευον αὐτὸν τάξαι τῷ ναύτῃ δραχμὴν Ἀττικήν, διδάσκοντες ὅτι ἂν οὗτος ὁ μισθὸς γένηται, οἱ τῶν Ἀθηναίων ναῦται ἀπολείψουσι τὰς ναῦς, καὶ μείω χρήματα ἀναλώσει. ὁ δὲ καλῶς μὲν ἔφη αὐτοὺς λέγειν, οὐ δυνατὸν δ' εἶναι παρ' ἃ βασιλεὺς ἐπέστειλεν αὐτῷ ἄλλα ποιεῖν. εἶναι δὲ καὶ τὰς συνθήκας οὕτως ἐχούσας, τριάκοντα μνᾶς ἑκάστῃ νηὶ τοῦ μηνὸς διδόναι, ὁπόσας ἂν βούλωνται τρέφειν Λακεδαιμόνιοι. ὁ δὲ Λύσανδρος τότε μὲν ἐσιώπησε· μετὰ δὲ τὸ δεῖπνον, ἐπεὶ αὐτῷ προπιὼν ὁ Κῦρος ἤρετο τί ἂν μάλιστα χαρίζοιτο ποιῶν, εἶπεν ὅτι Εἰ πρὸς τὸν μισθὸν ἑκάστῳ ναύτῃ ὀβολὸν προσθείης. ἐκ δὲ τούτου τέτταρες ὀβολοὶ ἦν ὁ μισθός, πρότερον δὲ τριώβολον.

2. (*a*) In ext. (A) :—(1) explain the use of τὰ μὲν—τὰ δέ. (2) the construction of δυοῖν δεούσαις εἴκοσι ναυσίν. (3) τῷ ἵππῳ, what Dative? (*b*) In ext. (B) :—(1) parse ἀριστεῖα and supply the ellipsis. (2) ἀπωλώλει,—parse, and name the *transitive* and *intransitive* tenses of this verb. (3) ἔλαβον αὐτοῖς ἀνδράσι,—explain this use of the Dative, and express the phrase in Latin. (4) ἀπέλυσεν,—note the quantity of the penultimate. (*c*) In ext. (C) :—(1) explain the use of the Article in τῷ ναύτῃ, τοῦ μηνὸς. (2) εἶπεν ὅτι κ. τ. λ.—is there any thing peculiar in this use of ὅτι? (3) οὕτως ἐχούσας,—explain this idiom.

3. Parse carefully the following :—προσθείης, προπιών, ἀναλώσει, ἐπεσταλκέναι, παρεληλυθυίας, ἠρημένοι, ἠσεβήκει, δυνασθεῖσιν, εἰςέσθαι, ἐνεπρήσθη.

4. (*a*) Give the derivation and meaning of the following words, noticing cognate forms in Latin or English:—πρηστῆρος, δείλης, ἐπιβάται, ξυνωρίς. (*b*) Give the etymology, and the value, of :—δραχμήν, τάλαντον, μνᾶ, ὀβολός (*c*) State the difference in meaning between :—ἀνδράποδα and δοῦλοι. τὰ καλὰ and τὰ κἄλα. εὐθὺς and εὐθύ. ἡ ἀριστεία and τὰ ἀριστεῖα. ἐξηγεῖσθαί τινος and ἐξηγεῖσθαί τινι. ὁ νεὼς and τῆς νεώς. ἀλλὰ and ἄλλα. ἀγγεῖλαι and ἀγγείλαι.

6. (*a*) Decline : —ναῦς, νυκτός, λιμένος, πλοίων, τείχη, μηνός. (*b*) Compare :—πολύς, πρέσβυς, μέγας, αἰσχρός, ἰσχυρός, δεινός. (*c*) Distinguish, giving Latin equivalents, between αὐτόν, αὐτόν, ὅδε, οὗτος, and ἐκεῖνος. (*d*) Write down the principal Tenses (1*st. Sing. Ind.*) of :—φεύγω δίδωμι, ἐλαύνω, πείθω, ἵστημι, ἄγω.

SECOND YEAR.

GREEK.—EURIPIDES.—MEDEA.

WEDNESDAY, DECEMBER 12TH :—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL. D.

1. Translate :—

(A) ΤΡΟ. ἰὼ μοί μοι. ἰὼ τλήμων.
τί δέ σοι παῖδες πατρὸς ἁμπλακίας
μετέχουσι; τί τούσδ' ἐχθεις; οἴμοι,
τέκνα, μή τι πάθοιθ' ὡς ὑπεραλγῶ.
δεινὰ τυράννων λήματα, καί πως
ὀλίγ' ἀρχόμενοι πολλὰ κρατοῦντες
χαλεπῶς ὀργὰς μεταβάλλουσιν.
τὸ γὰρ εἰθίσθαι ζῆν ἐπ' ἴσοισιν
κρεῖσσον· ἐμοιγ' οὖν, εἰ μὴ μεγάλως,
ὀχυρῶς γ' εἴη καταγηράσκειν.

τῶν γὰρ μετρίων πρῶτα μὲν εἰπεῖν
τοὔνομα νικᾷ, χρῆσθαί τε μακρῷ
λῷστα βροτοῖσιν· τὰ δ' ὑπερβάλλοντ'
οὐδένα καιρὸν δύναται θνητοῖς,
μείζους δ' ἀτας, ὅταν ὀργισθῇ
δαίμων, οἷοις ἀπέδωκεν.

(B) ΚΡΕ. λέγεις ἀκοῦσαι μαλθάκ', ἀλλ' ἔσω φρενῶν
ὀρῥωδία μοι μή τι βουλεύῃς κακόν,
τοσῷδε δ' ἧσσον ἢ πάρος πέποιθά σοι·
γυνὴ γὰρ ὀξύθυμος, ὡς δ' αὔτως ἀνήρ,
ῥᾴων φυλάσσειν ἢ σιωπηλὸς σοφός.
ἀλλ' ἔξιθ' ὡς τάχιστα, μὴ λογους λέγε·
ὡς ταῦτ' ἄραρε, κοὐκ ἔχεις τέχνην ὅπως
μενεῖς παρ' ἡμῖν, οὖσα δυσμενὴς ἐμοι.
ΜΗΔ. μή, πρός σε γονάτων τῆς τε νεογάμου κόρης.
ΚΡΕ. λόγους ἀναλῶις· οὐ γὰρ ἂν πείσαις ποτέ.
ΜΗΔ. ἀλλ' ἐξελᾷς με κοὐδὲν αἰδέσει λιτάς;
ΚΡΕ. φιλῶ γὰρ οὐ σὲ μᾶλλον ἢ δόμους ἐμούς.
ΜΗΔ. ὦ πατρίς, ὥς σου κάρτα νῦν μνείαν ἔχω.

(C) Καὶ ταῦθ' ὑφ' ἡμῶν, ὦ κάκιστ' ἀνδρῶν, παθὼν
προὔδωκας ἡμᾶς, καινὰ δ' ἐκτήσω λέχη,
παίδων γεγώτων· εἰ γὰρ ἦσθ' ἄπαις ἔτι,
σύγγνωστ' ἂν ἦν σοι τοῦδ' ἐρασθῆναι λεχους.
ὅρκων δὲ φρούδη πίστις, οὐδ' ἔχω μαθεῖν
ἢ θεοὺς νομίζεις τοὺς τότ' οὐκ ἄρχειν ἔτι,
ἢ καινὰ κεῖσθαι θέσμ' ἐν ἀνθρώποις τὰ νῦν,
ἐπεὶ σύνοισθά γ' εἰς ἐμ' οὐκ εὔορκος ὤν.
φεῦ δεξιὰ χείρ, ἧς σὺ πόλλ' ἔλαμβάνου,
καὶ τῶνδε γονάτων, ὡς μάτην κεχρώσμεθα,
κακοῦ πρὸς ἀνδρός, ἐλπίδων δ' ἡμάρτομεν.
ἄγ', ὡς φίλῳ γὰρ ὄντι σοι κοινώσομαι,
δοκοῦσα μή τι πρός γε σοῦ πράξειν καλῶς,
ὅμως δ'· ἐρωτηθεὶς γὰρ αἰσχίων φανεῖ.

2. Ext. (A) ;—(1) name the metre, write down the scheme of it, and scan the last four vss. of this ext. (2) Show the construction of *σοι* and *ἀμπλακίας* in vs. 2. (3) Construe carefully vss. 11-15, pointing out any peculiarities of usage, and varieties of interpretation. (4) *ἀπέδωκεν*,—what use of the Aorist?

3. Ext. (B) :—(1) *μή τι βουλεύῃς—βουλεύσῃς*,—distinguish between these variants. (2) *ἀκοῦσαι μαλθάκ'—ῥᾴων φυλάσσειν*,—what use of the Infinitive? (3) *ὅπως μενεῖς—μένῃς*,—distinguish between these readings. (4) *πρός σε γονάτων*, explain the construction.

4. Ext. (C) :—(1) γεγώτων,τοῦδ' λέχους, ὅρκων, ἧς, γονάτων, ἐλπίδων,—explain these several uses of the Genitive. (2) scan vs. 6. (3) θέσμ',—parse and give the *Nom. Sing.* (4) εἰ-ἦ θεούς, can the latter reading stand, and why ?

5. Parse the following verbs, giving (1st sing. Ind.) their principal parts :—χρῆν, θείην, πυργοῖς, ὑπεκδραμεῖν, ἀνίεις, ἀνεπτα, ὑμνεῦσαι, ἀραρε, τεύξει, ὠσθήσει, ἀνήνασθαι, μολών.

6. Give the derivation and meaning of :—κυανέας, αἰσυμνᾶ, κοίρανος, ἐξηντλημένα, ἀμφιπύλου, εὐκταίαν, εἰλαπίναις, ἀσης, βραβεύς, ἐχεγγύους.

7. Explain the syntax of the following, and point out any varieties of reading that occur :—(*a*) ἀνδάνουσα φυγῇ πολιτῶν ὧν αφίκετο χθόνα. (*b*) ὡσθ' ἱμερός μ' ὑπῆλθε γῇ τε κοὐρανῷ λέξαι μολούσῃ δεῦρο δεσποίνης τύχας. (*c*) δῆλον δ' ἀρχῆς ἐξαιρόμενον νέφος οἰμωγῆς ὡς ταχ' ἀνάψει μείζονι θυμῷ.

8. Distinguish between :—εἰ καὶ and καὶ εἰ, οὖν and οὖν, παρά and πάρα, σίγα and σιγᾷ, συμφορὰ and σύμφορα, κάλων and καλῶν, θράσος and θάρσος, γαμεῖν and γαμεῖσθαι, πέτρος and πέτρα, δεξιᾶς and δεξιάς, ἐξιάσι and ἐξιᾶσι, σωφρόνων and σωφρονῶν.

THIRD YEAR.

GREEK.—LYSIAS.—CONTRA ERATOSTHENEM.

TUESDAY, DECEMBER 18TH :—MORNING, 9 TO 12.

Examiner,... ....REV. GEORGE CORNISH, LL. D.

1. Translate :—

(A) Εἶτ', ὦ σχετλιώτατε πάντων, ἀντέλεγες μὲν ἵνα σώσειας, συνελάμβανες δὲ ἵνα ἀποκτείνειας ; καὶ ὅτε μὲν τὸ πλῆθος ἦν ὑμῶν κύριον τῆς σωτηρίας τῆς ἡμετέρας, ἀντιλέγειν φῂς τοῖς βουλομένοις ἡμᾶς ἀπολέσαι, ἐπειδὴ δὲ ἐπὶ σοὶ μόνῳ ἐγένετο καὶ σῶσαι Πολέμαρχον καὶ μή, εἰς τὸ δεσμωτήριον ἀπήγαγες ; εἶθ' ὅτι μέν, ὡς φῂς, ἀντειπὼν οὐδὲν ὠφέλησας, ἀξιοῖς χρηστὸς νομίζεσθαι, ὅτι δὲ συλλαβὼν ἀπέκτεινας, οὐκ οἴει ἐμοὶ καὶ τουτοισὶ δοῦναι δίκης ; Καὶ μὴν οὐδὲ τοῦτο εἰκὸς αὐτῷ πιστεύειν, εἴπερ ἀληθῆ λέγει φάσκων ἀντειπεῖν, ὡς αὐτῷ προσετάχθη. οὐ γὰρ δή που ἐν τοῖς μετοίκοις πίστιν παρ' αὐτοῦ ἐλάμβανον.

(B) Τῶν μὲν μαρτύρων ἀκηκόατε. τὸ δὲ τελευταῖον εἰς τὴν ἀρχὴν καταστὰς ἀγαθοῦ μὲν οὐδενὸς μετέσχεν, ἄλλων δε πολλῶν. καίτοι εἴπερ ἦν ἀνὴρ ἀγαθός, ἐχρῆν ἂν πρῶτον μὲν μὴ παρανόμως ἄρχειν, ἔπειτα τῇ βουλῇ μηνυτὴν γίγνεσθαι περὶ τῶν εἰσαγγελιῶν ἁπασῶν, ὅτι ψευδεῖς εἶεν, καὶ Βάτραχος καὶ Αἰσχυλίδης οὐ τἀληθῆ μηνύουσιν, ἀλλὰ τὰ ὑπὸ τῶν τριάκοντα πλασθέντα εἰσαγγέλλουσι,

συγκείμενα ἐπὶ τῇ τῶν πολιτῶν βλάβῃ. καὶ μὲν δή, ὦ ἄνδρες δικασταί, ὅσοι κακόνοι ἦσαν τῷ ὑμετέρῳ πλήθει, οὐδὲν ἔλαττον εἶχον σιωπῶντες· ἕτεροι γὰρ ἦσαν οἱ λέγοντες καὶ πράττοντες ὧν οὐχ οἷόν τ' ἦν μείζω κακὰ γενέσθαι τῇ πόλει. ὁπόσοι δ' εὖνοί φασιν εἶναι, πῶς οὐκ ἐνταῦθα ἔδειξαν, αὐτοί τε τὰ βέλτιστα λέγοντες καὶ τοὺς ἐξαμαρτάνοντας ἀποτρέποντες ;

(C) *Ὑμεῖς δέ, ὦ ἄνδρες Ἀθηναῖοι, πραττούσης μὲν τῆς ἐν Ἀρείῳ πάγῳ βουλῆς σωτήρια, ἀντιλεγόντων δὲ πολλῶν θηραμένει, εἰδότες δὲ ὅτι οἱ μὲν ἄλλοι ἀνθρωποι τῶν πολεμίων ἕνεκεν τἀπόρρητα ποιοῦνται, ἐκεῖνος δ' ἐν τοῖς αὑτοῦ πολίταις οὐκ ἠθέλησεν εἰπεῖν ταῦτα ἃ πρὸς τοὺς πολεμίους ἐμελλεν ἐρεῖν, ὅμως ἐπετρέψατε αὐτῷ πατρίδα καὶ παῖδας καὶ γυναῖκας καὶ ὑμᾶς αὐτούς. ὁ δὲ ὢν μὲν ὑπέσχετο οὐδὲν ἔπραξεν, οὕτως δὲ ἐνετεθύμητο ὡς χρὴ μικρὰν καὶ ἀσθενῆ γενέσθαι τὴν πόλιν, ὥστε περὶ ὧν οὐδεὶς πώποτε οὔτε τῶν πολεμίων ἐμνήσθη οὔτε τῶν πολιτῶν ἠλπισε, ταῦθ' ὑμᾶς ἔπεισε πρᾶξαι, οὐχ ὑπὸ Λακεδαιμονίων ἀναγκαζόμενος, ἀλλ' αὐτὸς ἐκείνοις ἐπαγγελλόμενος, τοῦ τε Πειραιῶς τὰ τείχη περιελεῖν καὶ τὴν ὑπάρχουσαν πολιτείαν καταλῦσαι, εὖ εἰδὼς ὅτι, εἰ μὴ πασῶν τῶν ἐλπίδων ἀποστερηθήσεσθε, ταχεῖαν παρ' αὐτοῦ τὴν τιμωρίαν κομιεῖσθε.*

2. (*a*) Write an account, with dates, of the events referred to ext. (C). (*b*) Explain the use of the Mood and Tense in *ἀποστερηθήσεσθε* and *κομιεῖσθε*. (*c*) *σωτήρια*,—parse.

3. Write explanatory notes on the following expressions, occurring in this oration :—(*a*) *ἀποψηφίζεσθαι*. (*b*) *καταψηίζεσθαι*. (*c*) *ἐξεκλησιάζετε*. (*d*) *μετοικοῦντας*. (*e*) *τὰς χορηγίας*. (*f*) *εἰσφοράς*. (*g*) *δίκην οὔτε ἐδικασάμεθα οὔτε ἐφύγομεν*. (*h*) *τριηραρχήσαντες*.

4. Explain briefly the following historical allusions :—(*a*) *εἰ τοὺς μὲν στρατηγούς, οἳ ἐνίκων ναυμαχοῦντες θανάτῳ ἐζημιώσατε*. (*b*) *Θρασυβούλου Φυλὴν κατειληφότος*. (*c*) *Λυσανδρον ἄρχοντα ἠτήσατο*. (*d*) *ὁ πατὴρ αὐτοῦ τῶν προβούλων ὤν*. (*e*) *οἱ καθεστηκότες ἔφοροι*.

5. Give the grammatical construction of the following extracts :—(*a*) *οὐκ ἀρξασθαί μοι δοκεῖ ἄπορον εἶναι τῆς κατηγορίας, ἀλλὰ παύσασθαι λέγοντι*. (*b*) *ἐως ἂν θανάτου δόξῃ τῷ φύγοντι ἄξια εἰργάσθαι*. (*c*) *συμβουλεύω μὴ τούτων ἀποψηφισομένους ὑμῶν αὐτῶν καταψηφίσασθαι*.

6. Parse the following :—*ἀποῦσι, κρείττους, κατέστησαν, ἐξιοῦσι, ἥξων, ἐκεῖσε, ληφθῶ, πευσόμενον, προὔθεντο, ἀπαλλαγῆναι, ἠρέθη, ἀνοίσειν*.

7. Derive and translate the following :— *ἐπεδήμησε, ῥήτωρ τἀπόρρητα, ἐδανείσατο, ἑταιρείᾳ, εἰσαγγελιῶν, βάσανον, ἀπεγράφοντο, συκοφάνται, παράγγελμα*.

8. Name the date and attendant circumstances of the delivery of the speech *Contra Eratosthenem*. State what you know of the court before which it was spoken, in respect of its composition and functions.

FIRST YEAR

LATIN.—CICERO.—SELECT LETTERS.

THURSDAY, DECEMBER 13TH:—MORNING, 9 TO 12.

Examiner,.....REV. DR. CORNISH.

1. Translate:—

(A) L. Iulio Caesare C. Marcio Figulo consulibus filiolo me auctum scito salva Terentia. Abs te tam diu nihil litterarum! Ego de meis ad te rationibus scripsi antea diligenter, hoc tempore Catilinam, competitorem nostrum, defendere cogitamus; iudices habemus, quos voluimus, summa accusatoris voluntate. Spero, si absolutus erit, coniunctiorem illum nobis fore in ratione petitionis; sin aliter acciderit, humaniter feremus. Tuo adventu nobis opus est maturo; nam prorsus summa hominum est opinio tuos familiares, nobiles homines, adversarios honori nostro fore: ad eorum voluntatem mihi conciliandam maximo te mihi usui fore video. Qua re Ianuario mense, ut constituisti, cura ut Romae sis.

(B) Etenim γεωγραφικὰ, quae constitueram, magnum opus est: ita valde Eratosthenes, quem mihi proposueram, a Serapione et ab Hipparcho reprehenditur; quid censes, si Tyrannio accesserit? et hercule sunt res difficiles ad explicandum et ὁμοειδεῖς, nec tam possunt ἀνθηρογραφεῖσθαι, quam videbantur, et, quod caput est, mihi quaevis satis iusta causa cessandi est, qui fiam dubitem an hic Antii considam et hoc tempus omne consumam, ubi quidem ego mallem duumvirum quam Romae fuisse. Tu vero sapientior Buthroti domum parasti. Sed, mihi crede, proxima est illi municipio haec Antiatium civitas: esse locum tam prope Romam, ubi multi sint, qui Vatinium numquam viderint!

TULLIUS S. D. TERENTIAE ET TULLIOLAE ET CICERONI SUIS.

(C) Noli putare me ad quemquam longiores epistolas scribere, nisi si quis ad me plura scripsit, cui puto rescribi oportere; nec enim habeo quod scribam nec hoc tempore quicquam difficilius facio. Ad te vero et ad nostram Tulliolam non queo sine plurimis lacrimis scribere; vos enim video esse miserrimas, quas ego beatissimas semper esse volui idque praestare debui et, nisi tam timidi fuissemus, praestitissem. Pisonem nostrum merito eius amo plurimum: eum, ut potui, per litteras cohortatus sum gratiasque egi, ut debui. In novis tribunis pl. intellego spem te habere: id erit firmum, si Pompeii voluntas erit, sed Crassum tamen metuo.

2. Ext. (A) —(1) Explain the several uses of the *Ablative* in the first sentence. (2) *Nihil literarum*,—construe and supply the ellipsis. (3) *Mihi usui*,—construe and explain these Datives. (4) *Romae*,—what case?

3. Ext. (B):—(1) Who were the persons severally mentioned in the first sentence? (2) *Antiatium*,—give the *Nom. Sing.*, and decline both numbers (3) *duumvirum*,—What case, and why? (4) *esse locum tam prope Romam* —explain these uses of the *Accusative*. (5) Explain the following references from the same ep.:—*Vigintiviris*, *Theopompio* genere, *ἀνέκδοτα*, *πολιτεύτεον*, *denrii* an *cistophoro Pompeiano*.

4. Write short explanatory notes of the meaning of:—(*a*) Ne Latinae in officio non manerent, et in montem Albanum hostias non adducerent. (*b*) Asiam de censoribus conduxerant. (*c*) Ut induceretur locatio. (*d*) Is ad plebem P. Clodium traducit. (*e*) Togulam illam pictam. (*f*) Pragmatici homines. (*g*) H. S. centiens—centum.

5. Parse the following verbs, giving (1*st Sing.*) the *Perf. Indic.*, *Future Indic.*, and *Future Perf.*, with the *Pres.*, *Perf.*, and *Fut. Inf.*, of each:—impensa, periremus, praestitissem, subisses, decreras, inductus, laetere, luxerunt, devorterer, nactus.

6. (*a*) Decline the following in *Sing.* and *Plu.*:—consuetudine, moribus, officio, minorem, digressu, volneris, misellae. (*b*) Write in full the following contractions:—(1) D. a. d. III. Non. Oct. (2) Acta Kal. Sext. (3) Pr. Kal. Mai. (4) M. T. M. F. Cicero S. D. Cn. Pomp. Cn. F. Mag. Imp.

7. (*a*) Decline in the *Singular*:—tellus, genus, servitus, nux, domus; and in the *Plural*:—nix, poema, lapis, iter, bos. (*b*) Give the *Gen. Sing.* and *Dat. Plu.* of:—aper, latus, manus, filia, artus, scurra. (*c*) Write down the *Perf.* and *Supine* of:—do, faveo, tego, parco.

8. (*a*) What cases do the following words severally take after them:—peritus, interest, consulo, utilis, fungor. (*b*) Express in Latin, variously —What will become (*fio*) of my Tullia? (*c*) Turn into Latin:—(1) All the best citizens were slain. (2) You and I have fought many a battle. (3) The Forum was in the midst of the city of Rome. (4) He was a general of consummate skill and approved valour. (5) Augustus married Livia; and his sister Octavia married Antonius.

SECOND YEAR.

LATIN.—TACITUS.—GERMANIA.

THURSDAY, DECEMBER 13TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate:—

(A) Reges ex nobilitate, duces ex virtute sumunt. nec regibus infinita aut libera potestas, et duces exemplo potius quam imperio, si prompti, si conpicui, si ante aciem agant, admiratione praesunt. ceterum neque animadvertere neque vincire, ne verberare quidem nisi sacerdotibus permissum, non quasi in poenam nec ducis iussu, sed velut deo imperante, quem adesse bellantibus credunt. effigiesque et signa quaedam detracta lucis in proelium ferunt; quodque praecipuum fortitudinis incitamentum est, non casus neque fortuita conglobatio turmam aut cuneum facit, sed familiæ et propinquitates; et in proximo pignora, unde feminarum ululatus audiri, unde vagitus infantium. hi cuique sanctissimi testes, hi maximi laudatores: ad matres, ad coniuges volnera ferunt; nec illae numerare aut exigere plagas pavent, cibosque et hortamina pugnantibus gestant.

(B) Cum ventum in aciem, turpe principi virtute vinci, turpe comitatui virtutem principis non adaequare. iam vero infame in omnem vitam ac probrosum superstitem principi suo ex acie recessisse: illum defendere, tueri, sua quoque fortia facta gloriae eius adsignare praecipuum sacramentum est: principes pro victoria pugnant, comites pro principe. si civitas in qua orti sunt longa pace et otio torpeat, plerique nobilium adulescentium petunt ultro eas nationes, quae tum bellum aliquod gerunt, quia et ingrata genti quies et facilius inter ancipitia clarescunt magnumque comitatum non nisi vi belloque tuentur; exigunt enim principis sui liberalitate illum bellatorem equum, illam cruentam victricemque frameam. nam epulae et quamquam incompti, largi tamen apparatus pro stipendio cedunt. materia munificentiae per bella et raptus. nec arare terram aut exspectare annum tam facile persuaseris quam vocare hostem et volnera mereri. pigrum quin immo et iners videtur sudore adquirere quod possis sanguine parare.

(C) Genus spectaculorum unum atque in omni coetu idem. nudi iuvenes, quibus id ludicrum est, inter gladios se atque infestas frameas saltu iaciunt. exercitatio artem paravit, ars decorem, non in quaestum tamen aut mercedem: quamvis audacis lasciviae pretium est voluptas spectantium. aleam, quod mirere, sobrii inter seria exercent, tanta lucrandi perdendive temeritate ut, cum omnia defecerunt, extremo ac novissimo iactu de libertate ac de corpore contendant. victus voluntariam servitutem adit: quamvis iuvenior, quamvis robustior, adligari se ac venire patitur. ea est in re prava pervicacia: ipsi fidem vocant. servos condicionis huius per commercia tradunt, ut se quoque pudore victoriae exsolvant.

2. (*a*) Ext. (A)—(1) *ex nobilitate*:—What interpretations are given of this? (2) *animadvertere*:—derive, and explain the meaning. 3) *effigies* et *signa*:—What were these? (4) *exigere* plagas:—what meanings are assigned, and which is to be preferred? (*b*) Ext. (B) (1) *jam vero*:—give the force and explain the usage. (2) *principi suo; gloriæ ejus; longa pace et otio; epulæ * * * apparatus*:—explain these constructions. (3) bello *tuentur—tueare*:—which reading is preferable, and why? (4) Facile *persuaseris*:—explain this idiom.

3. Define the terms *Hendiadys*, *Enallage*, *Zeugma*, *Ellipsis*, and give instances from this book of Tacitus.

4. Write explanatory notes on:—(1) Fenus agitare et in usuras extendere. (2) Funerum ambitio. (3) Ut colono iniungit. (4) Et salva utriusque temporis ratio est. (5) Nec data imputant nec acceptis obligantur. (6) Nec ulla orbitatis pretia. (7) Ex agnatis. (8) Memoriæ atque annalium.

5. Distinguish carefully between the following words as to their meaning, giving the etymology where you can:—instituta ritusque; agri, arva; liberti, libertini; propinqui, affines; nudi ac sordidi; discreti ac diversi; connexis et cohaerentibus; domus et penatium; defendere, tueri; scelere, flagitia.

6. Give the derivation and meaning of:—sinus, informem, fabuloso, armentis, serratos, bigatos, pignora, plagas, satis, lauti, lucos, nemora.

7. Explain the use and construction of the Supine, Gerund, and Gerundive, severally, by translating the following sentences into Latin:—(1) I must go to Rome. (2) The soldiers were sent to defend the city. (3) He went home to see his father. (4) Death is not to be feared.

8. (*a*) Give the comparative and superlative of:—fortiter, prope, acriter, diu, ultra, valde, male. (*b*) What cases do the following verbs take after them:—egeo, noceo, libero, impero, utor? (*c*) What cases do the following prepositions severally take after them?—ob, prae, pro, sub, supra, inter?

9. Write down the Perfect (1st Sing.) in the Indicative and Subjunctive, Act. and Pass., of:—flevo, noceo, caedo, cedo, credo, sino, parco, gero.

THIRD YEAR.

LATIN.—JUVENAL.—SATIRES VIII. AND X.

WEDNESDAY, DECEMBER 19TH :—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate :—

(A) Libera si dentur populo suffragia, quis tam
Perditus, ut dubitet Senecam præferre Neroni ;
Cujus supplicio non debuit una parari
Simia, nec serpens unus, nec culeus unus ?
Par Agamemnonidæ crimen ; sed causa facit rem
Dissimilem. Quippe ille Deis auctoribus ultor
Patris erat cæsi media inter pocula : sed nec
Electræ jugulo se polluit aut Spartani
Sanguine conjugii ; nullis aconita propinquis
Miscuit, in scena nunquam cantavit Orestes,
Troica non scripsit. Quid enim Verginius armis
Debuit ulcisci magis, aut cum Vindice Galba ?
Quid Nero tam sæva crudaque tyrannide fecit ?
Hæc opera atque hæ sunt generosi Principis artes,
Gaudentis fœdo peregrina ad pulpita cantu
Prostitui, Graiæque apium meruisse coronæ.

(B) "Da spatium vitæ, multos da, Jupiter, annos !"
Hoc recto vultu solum, hoc et pallidus optas.
Sed quam continuis et quantis longa senectus
Plena malis ! Deformem et tetrum ante omnia vultum
Dissimilemque sui, deformem pro cute pellem,
Pendentesque genas et tales aspice rugas,
Quales, umbriferos ubi pandit Tabraca saltus,
In vetula scalpit jam mater simia bucca.
Plurima sunt juvenum discrimina : pulcrior ille
Hoc, atque ille alio ; multum hic robustior illo :
Una senum facies, cum voce trementia membra,
Et jam leve caput madidique infantia nasi.
Frangendus misero gingiva panis inermi :
Usque adeo gravis uxori natisque sibique,
Ut captatori moveat fastidia Cosso.

2. (*a*) What political event is supposed to be referred to in vs. 1 of ext. (A)? (*b*) Give a short account of Seneca. (*c*) Write short explanatory notes on the legendary and historical personages referred to in that extract.

3. (*a*) State the subject of Satire X., and criticise its characteristics as to mode of treatment and literary style as compared with Satire VIII. (*b*) *Cute-pellem*,—distinguish between these words as to their exact meaning, and give the cognates of both in English. (*c*) *Tabraa*,—explain e geographical reference. (*d*) *madidi nasi*,— What use of the Genitive?

4. Write short biographical notes on the following:—Sostratus, Bithyno tyranno, ducem luscum, Sejanus, Principis angusta Caprearum in rupe sedentis, alter ridebat * * flebat contrarius alter.

5. Explain the meaning of the following:—(1) Argenti puri. (2) Quum lato Setinum ardebit in auro. (3) Defossa in loculis sportula. (4) Praecedentia longi agminis officia. (5) Vervecum in patria. (6) Pila, cohortes, egregios equites et castra domestica. (7) Quinquatribus. (8) Spartana chlamys, conchylia Coa.

6. Derive, and define the meaning of:—Induperator, pusillus, stemmata, nanus, procerem, generosum, nobilis, viduas, cerdoni, mirmillonis, asylum, sufflamen. Write down the Greek forms of such as have them.

7. (*a*) What is the force of the Dative case? (*b*) Mention the chief classes of words governing the Dative. (*c*) Illustrate the use of the Predicative Dative; Ethical Dative; Dative of Limitation; and Recipient Dative.

8. Show the different meanings of the singular and plural of:—aedes, auxilium, carcer, copia, comitium, litera, castrum.

MATHEMATICS AND NATURAL PHILOSOPHY.

FIRST YEAR.

EUCLID—ARITHMETIC.

FRIDAY, DECEMBER 14TH:—MORNING, 9 TO 12.

Examiners,..... .... { ALEXANDER JOHNSON, LL.D. / G. H. CHANDLER, M.A.

1. If four right lines be proportional, the rectangle under the extremes is equal to the rectangle under the means.

a. Hence show that if two chords of a circle intersect the rectangles under their segments are equal.

2. Define similar rectilinear figures. In a right-angled triangle, if a perpendicular be let fall from the right angle on the hypotenuse, the triangles on each side of it are similar to the whole and to each other.

3. Bisect a given arc of a circle.

4. Find a third proportional to 1·36 and ·245

5. Simplify the fraction $\frac{1\frac{1}{2} + \frac{3}{8} - \frac{3}{4}}{\frac{4}{5} \quad (\frac{2}{3} - \frac{1}{4})}$

6. If the Earth goes round the sun in $365\frac{1}{4}$ days, and her distance from the sun be $92\frac{1}{2}$ millions of miles, how many miles does she travel in a day? (Take the ratio of the circumference of a circle to its diameter as $\frac{22}{7}$).

7. The complements of the parallelograms which are about the diameter of any parallelogram are equal.

8. If a straight line be bisected and produced to any point, the rectangle contained by the whole line thus produced and the part produced, together with the square on the half of the line bisected, is equal to the square on the line made up of the half and the part produced.

a. Hence show that the rectangle contained by the sum addin fference of any two lines is equal to the difference of the squares on those lines.

9. In a given circle inscribe an equilateral and equiangular hexagon.

10. Similar polygons may be divided into the same number of similar triangles, having the same ratio that the polygons have; and the polygons are to one another in the duplicate ratio of third homologous sides.

a. Prove that they are also to one another as the squares on their homologous sides.

11. Divide \$85.36 into two parts, which shall be to one another as 5 : 14.

12. Find the expense of carpeting a room 15 ft. 9 in. long by 12 ft. 5 in broad, the carpet being $\frac{3}{4}$ yard wide and \$1.25 per yard.

SECOND YEAR.

EUCLID—ALGEBRA—TRIGONOMETRY.

WEDNESDAY, DECEMBER 19TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Prove that two equal rectangles have the two adjacent sides of the one reciprocally proportional to the two adjacent sides of the other.

2. From a given line cut off one-third part.

3. Equiangular triangles have the sides about the equal angles proportional, and the sides opposite the equal angles are homologous.
(N.B.—Define homologous).

4. The angle in a segment of a circle greater than a semi-circle is acute.

5. Solve the equations:—

$$a\,x + by = c, \quad a\,x - by = d;$$

$$\frac{(x-2)\ \ (x-3)}{x-4} = 6\,(x-4);$$

$$\tfrac{1}{3}\,(2\,x-4) - \tfrac{2}{5}\,(3\,x - 7) + \tfrac{2}{15} = 0:$$

6. Find two numbers such that their sum shall be 14, and the square of their difference $\frac{1}{4}$.

7. Simplify $\dfrac{\dfrac{2\,x-3}{2} - \dfrac{3\,x-4}{4\,x}}{\dfrac{2}{3}\left(\dfrac{x-1}{2\,x-3}\right)}$.

8. Find the least common multiple of

$$2\,(x^2 - y^2),\ 6\,(x^2 + y^2),\ 5\,(x^4 - y^4),\ \text{and}\ 2\,(x^3 - y^3).$$

9. In any triangle prove $\cos \tfrac{1}{2} A = \sqrt{\dfrac{s\,(s-a)}{b\,c}}$

10. The sides of any triangle are in the same ratio as the sines of the opposite angles.

11. Prove $1 + \cos A = 2\cos^2 \tfrac{1}{2} A.$
$\sin 2\,A = 2 \sin A \cos A.$

12. Define a logarithm; and prove that the logarithm of the product of two numbers is equal to the sum of the logarithms of the numbers.

13. If $\tan A = \tfrac{1}{2}$, find $\cos A$.

14. Find $\sin 60°$, $\cos 60°$, and $\operatorname{cosec} 60°$.

THIRD YEAR.

MECHANICS.

WEDNESDAY, DECEMBER 12TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. How are pressures represented by right lines? State the principle of the "composition of forces," pointing out any caution to be observed in its application. Define "resultant."

a. If two forces acting on the same particle are given, and also the angle between them, state and prove a formula for calculating the magnitude of the resultant.

2. Define "moment" of a force with regard to any point, and prove that the moments of any two forces acting on the same particle are equal and opposite with regard to any point on their resultant.

3. State the Law of Universal Gravitation, and express it in an algebraical form. What is the nature of the proof of it?

4. Define "centre of gravity." Find how far from the centre of the Earth is the common centre of gravity of the Earth and Moon, the mass of the former being 81 times the mass of the latter, and the distance of their centres being assumed to be 240,000 miles.

5. Two pegs are fixed in a wall at the same height and 4 feet apart; a cord 8 feet long is secured to the pegs and a weight of W pounds is suspended from the middle of the cord, find the pull on each peg.

6. If the force required to overcome friction at a given speed on a level railroad is 10 lbs. per ton, find the force required to ascend a gradient of 1 in 21.

7. State Newton's Third Law of Motion, and explain it by examples, including the collision of bodies.

8. Apply the principle of "constancy of work done" to find the conditions of equilibrium in the "screw."

9. Prove that the height of any place in feet is equal to the square of the number of quarter seconds occupied by a body in falling from the top to the bottom.

FOURTH YEAR.

ASTRONOMY.

WEDNESDAY, DECEMBER 12TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. In order to lay down the positions of the heavenly bodies on a celestial globe what astronomical measurements must be made? What instruments are used in making them?

2. Define obliquity of the ecliptic. Describe a method by which it might be roughly ascertained.

3. Describe briefly what you have seen in the telescopic view of the moon, and give a method for ascertaining the heights of the lunar mountains.

4. How can it be shown that the sun is nearer the earth in winter than in summer?

5. Investigate a method for determining the Periodic Time of Venus.

6. State approximately the periodic times of the principal planets; and find by Kepler's Third Law the distance of Jupiter from the Sun, assuming the distance of the Earth from the Sun as unit.

7. How is *mean solar time* found for a given place? What is *standard time?* If a clock keeping mean solar time at Montreal is to be made to show standard time, should the minute hand be pushed backwards or forwards, the longitude of Montreal being assumed to be $4^h\ 54^m\ 18^s$ W. Give reasons.

8. Explain the principle of the method for finding the weight of the Earth.

FOURTH YEAR.

MECHANICS—HYDROSTATICS.

MONDAY, DEC. 17TH:—MORNING, 9 TO 12.

Examine,.....ALEXANDER JOHNSON, LL.D.

1. If a particle having the unit of mass travel uniformly in a circle, show that the force attracting it to the centre is directly proportional to the radius of the circle, and inversely proportional to the square of the Periodic Time.

2. In Atwood's Machine find the velocity acquired by the descending body at the end of one second.

a. If the weights be 10 and 11 pounds respectively, how far will the descending weight fall in three seconds.

3. The velocity acquired by a body in running down any inclined plane is equal to the velocity acquired in falling down the height of the plane.

4. Find the centre of gravity of a homogeneous thin plate cut into the form of a triangle.

5. Define centre of pressure, and find it in the case of a rectangular surface one of whose sides coincides with the level of the liquid.

6. If 200 cubic inches of gas whose temperature is 60° and pressure 30 inches be raised in temperature to 280°, and its pressure reduced to 20 inches; calculate its volume.

7. Find a formula for determining the specific gravity of a liquid mixture, when the weights and specific gravities of the components are given. When will the formula not be applicable.

ENGLISH.

FIRST YEAR.

ENGLISH LANGUAGE AND LITERATURE.

TUESDAY, DECEMBER 18TH:—MORNING, 9 TO 12.30.

Examiner,.....CHAS. E. MOYSE, B.A.

A. *Literature.*

1. Explain Thomas de Quincey's definition of Literature. 2. Give one proof that History and Literature must be studied together. 3. Why would an arrangement of Literature under the heads, History, Poetry, and Philosophy be defective? 4. Mention the waves of Aryans that have crossed Europe. 5. Name two non-Aryan peoples of different localities. 6. Name the two branches of the Celtic race. 7. What were the two kinds of Celtic tales? 8. Mention three facts about the battle of Gabhra. 9. Who wrote the Gododin? What was said about "Mountaineer"? 10. Mention two facts to prove the artistic excellence of the Celts, other than literary. 11. Name a great point of difference between the Gododin and Beówulf. 12. Give a short account of Llywarch Hen. 13. Mention three noteworthy features of the Anglo-Saxon invasions. 14. For what is Penda remarkable? 15. Name the two chief literary centres abroad during the Anglo-Saxon period. 16. What does Alfred say about learning in his day? 17 What was a Physiologus? Why noteworthy? 18. A short account of Geoffrey of Monmouth. 19. What was Trinovant? 20. Make a note on the *Brunellus*. 21. On the *Anren Riwle*. 22. On the *Ayenbite of Inwit*.

B. *Grammar.*

1. What are the three kinds of literary symbols used to convey ideas? 2. A note on Runes. 3. Write Anglo-Saxon letters no longer employed 4. Write modern letters not used by the Anglo-Saxons. 5. What is a surd? 6. What is a vowel? 7. What are the breathings? are they surds? 8. Name the three Early English dialects. 9. What is Ablaut? explain ully. 10. Umlaut? explain fully.

Analyse grammatically:—

(*a*) At a small distance from the house, my predecessor had made a seat over-shadowed by a hedge of hawthorn and honeysuckle.

(*b*) It was my constant rule in life never to avoid the conversation of any man.

(*c*)
The potent rod
Of Amram's son, in Egypt's evil day,
Waved round the coast, up called a pitchy cloud
Of locusts, warping on the eastern wind.

(*d*) As I was going out with that resolution, I was met at the door by the captain of a ship with whom I had formerly some little acquaintanec and he agreed to be my companion.

SECOND YEAR.

ENGLISH LITERATURE.

THURSDAY, DECEMBER 20TH:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Sketch the influence of France on our Literature as displayed,

(*a*) In dramatic construction.

(*b*) In current opinion concerning the Elizabethan drama.

(*c*) In dramatic emendation of older plays.

2. Discuss, at length, Addison's criticisms of the *Ballad of Chevy Chase* and the *Babes in the Wood.*

3. Show the influences which Pope felt, and also his place in the Literature of his time.

4. What do you know concerning the *Shortest Way with the Dissenters* and the *Review?*

MENTAL AND MORAL PHILOSOPHY.

SECOND YEAR.

ELEMENTARY PSYCHOLOGY.

TUESDAY, 18TH DECEMBER:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Explain (*a*) the origin of the name Psychology, (*b*) the subject of the science which it designates.

2. Why is it incorrect to speak of the brain alone as the organ of mind? What is its organ?

3. (*a*) Define a sense, and (*b*) distinguish the two kinds of senses.

4. Take any of the senses, and describe (*a*) its organ, (*b*) the agencies that excite it, (*c*) the sensations excited in it.

5. (*a*) Distinguish Presentations and Representations. (*b*) Explain how Representations are excited in consciousness.

6. Name and state the Primary Laws of Association.

7. Take any familiar case of suggestion, and show how it is due to the combined operation of the Primary Laws.

8. State the Law of Mutual Suggestiveness and Suggestibility, illustrating its operation by an example.

9. Distinguish Comparison and Association.

10. Explain any four of the following terms, as applied to cognitions:—Intuitive, Transcendental, Empirical, A priori, A posteriori, Pure, Universal, Necessary.

THIRD YEAR.

MENTAL PHILOSOPHY.

THURSDAY, 13TH DECEMBER:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D

1. Take any simple perception and analyse it, showing the work of association and comparison in its formation.

2. What is the tendency of civilization in reference to the senses of taste and smell respectively?

3. Explain psychologically why, if the two forefingers are crossed, and an object placed between them, we seem to touch two objects.

4. Explain the auditory perceptions of space.

5. Show that speech is dependent on the musical sensibility of the ear.

6. Adduce any evidence to show that sight does not, by itself, give any perception of solid extension.

7. Take any of the visual perceptions and analyse it carefully.

8. Explain the relation of abstraction and attention.

9. Explain fully the function of language in generalisation.

FOURTH YEAR.

MORAL PHILOSOPHY.

FRIDAY, 14TH DECEMBER:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Distinguish the sphere of Ethics Proper from the psychological basis of Ethics.

2. Explain the theory on the origin of the emotions held by Empirical Evolutionists.

3. Explain the qualities on which the motive power of a feeling depends.

4. State the Empirical theory on the origin of the consciousness of moral obligation.

5. State the theory which identifies the moral consciousness with practical reason.

6. What are the two conditions of absolute goodness?

7. Explain how an action may still have a certain relative goodness, even though it does not fulfil both conditions.

8. What explanation does Determinism give of moral responsibility?

9. Sketch the fundamental principles of Utilitarianism.

10. Make any critical remarks, whether favorable or unfavorable, on Utilitarianism.

FRENCH AND GERMAN.

FIRST YEAR.

FRENCH.

MONDAY, DECEMBER 17TH:—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M.A., B.C.L.

1. Translate into English:—

Le renard ayant la queue coupée.

Un vieux (*a*) renard, mais des plus fins,
Grand croqueur de poulets, grand preneur de lapins,
Sentant son renard d'une lieue
Fut enfin au piège attrapé.
Par grand hasard en étant échappé,
Non pas franc, car pour gage il y laissa sa queue:
S'étant (*b*) dis-je, sauvé, sans queue et tout honteux,
Pour avoir des pareils (comme il était habile),
Un jour que les renards tenaient conseil entre eux:
Que faisons-nous dit-il, de ce poids inutile,
Et qui va balayant tous les sentiers fangeux?
Que nous sert cette queue? Il faut (*c*) qu'on se la coupe:
Si l'on (*d*) me croit chacun s'y résoudra.

Lafontaine, L. V. f. V.

2. (*a*) What is the other masculine form of *vieux?* When is it used? What is the feminine? According to what rule is that feminine formed? Give two other words which follow that rule.

(*b*) Why is *étant* used and not *ayant?* Give the rule.

(*c*) What kind of verb is *faut* in French? Explain fully how it is to be constructed in French.

(*d*) How would you parse *l'?* Why is the verb *croit* in that number? Give the rule.

3. When a verb governs two personal pronouns as objects where do you place them, and in what order? Give two examples.

4. When do you translate the word *whose* by *dont*, by *de qui*, and *duquel, de laquelle*, etc? Give three examples.

5. What remark do you make about the gender of *personne*, and what does it require with the verb when it means, *nobody?* Give an example.

6. Write in full the *Preterite definite, Subjunctive present, Past anterior* of *être, recevoir, se promener, s'en aller* and *mourir.*

7. Translate into French:—

About what are the boys talking? The studies to which he applies himself. He trusts to what he has done. I know the shoemaker you speak of. A man on whose friendship I can rely. Give me the silver watch, and send the gold one to my friend. They who are lazy are unhappy. To-day is the seventeenth of Dec., 1883. Charlemagne was crowned emperor of the West in 800. Are you acquainted with my uncle? You have my book, give it to me. Well (*eh! bien*) no, do not give it me, keep it.

SECOND YEAR.

FRENCH.

MONDAY, DECEMBER 17TH:—MORNING, 9 TO 12.

Examiner,..... .....P. J. DAREY, M.A., B.C.L.

1. Translate into English:—

Harpagon.—Mais croyez-vous maître Simon, qu'il n'y ait rien à péricliter? et savez-vous le nom, les biens et la famille de celui pour qui vous parlez? *Maître Simon.*—Non. Je ne puis pas bien vous en instruire à fond, et ce n'est que par aventure que l'on m'a adressé à lui, mais vous serez de toutes choses éclairci par lui-même, et son homme m'a assuré que vous serez content quand vous le connaîtrez. Tout ce que je saurais vous dire, c'est que sa famille est fort riche, qu'il n'a plus de mère déjà, et qu'il s'obligera, si vous voulez, que son père mourra avant qu'il soit huit mois.

L'Avare A. 11 *Sc. 11.*

2. Translate the following expression taken from *l'Avare:*

Le ciel ne m'a donné d'autres rentes que l'intrigue et l'industrie. Tu seras bien fine si tu en tires quelque chose.....c'est le mortel de tous les mortels le plus dur et le plus serré.....il n'y a rien de plus sec et de plus aride que ses bonnes grâces.....Voilà un corps taillé, libre et dégagé comme il faut.....Où pouvez-vous donc prendre l'état que vous portez?...Je voudrais bien savoir, sans parler du reste, à quoi servent tous ces rubans dont vous voilà lardé depuis les pieds jusqu'à la tête, et si une demi-douzaine d'aiguillettes ne suffit pas pour attacher un haut-de-chausses.

3. State three cases when pronouns used as subjects are placed after the verb. Give examples.

4. State three instances when the preposition *à* must be expressed when it governs a personal pronoun. Give examples.

5. Give the rules for the proper use of the pronoun *soi*.

6. State four cases when the verb remains in the singular although preceded by several nouns forming the subject. Give an example of each case.

7. Explain fully when the English *Pluperfect* is to be translated by the French *Pluperfect* and when by the *Preterite anterior*. Give examples.

8. When are the *Imperfect* and the *Pluperfect of the Subjunctive* to be used? Give examples.

9. Write correctly the past participles in the following sentences, and give the rules: Les arbres que nous avons *planté* dans cette terre ont *crû* et *prospéré*. Le peu de fortune qu'il a *eu* a suffi pour élever sa famille. Les jeunes gens que vous avez *vu* marier dernièrement, je les ai *vu* naître, je les ai *vu* grandir, je les ai *vu* élever, je les ai *entendu* gronder par leur père, je les ai *vu* travailler quelquefois.

10. Translate into French :—

Men have never reaped the fruit of happiness from the tree of injustice. We must deduct from life the hours we have slept. That grieves me very much. The glory of a sovereign consists less in the extent of his states than in the happiness of his people. I shall not fail to do what you wish. During his stay in the country, as soon as he had breakfasted he went hunting. Do you believe that the guilty man sleeps tranquilly and that he can stifle the remorse with which he is racked? The example of a good life is the best lesson that one can give to mankind.

THIRD YEAR.

FRENCH.

FRIDAY, DECEMBER 21ST :—AFTERNOON, 2 TO 5.

Examiner,.....P. J. DAREY, M.A., B.C.L.

1. Traduisez en anglais :—

—Mais si pour ce métier un homme a trop de cœur ;
S'il veut tout du mérite, et rien de la faveur ;
Si, mis entre sa place et l'honneur, il résigne
L'emploi dont il vivait, pour rester dans sa ligne ;
Après un mot d'estime et de compassion,
Nul ne se souviendra de sa belle action :
Il est pauvre, inutile, et chacun le délaisse :
Et qu'il se garde alors d'avoir une faiblesse!
Un haro général s'élève contre lui :
Il a, le malheureux, mangé l'herbe d'autrui ! (*a*)
Il n'est pour le flétrir, pas d'injure assez forte,
Et s'il va quelque part, on le met à la porte.

L'honneur et l'argent, A. 1 Sc. III.

(*a*) A quoi fait-on allusion dans ce vers?

2. Traduisez les phrases idiomatiques suivantes ; *en français :*

It is clear that I ought to have noticed it before. I tried to keep step with him, and enter into conversation. We cannot decide till we know what has already passed. He is a distant relation, of whom I never heard my father speak. My brother did not much care to undertake the journey ; *en anglais :* Qu'importe, quand il y a la fortune au bout. Quand les désirs n'ont pas de frein, ils atteignent toujours l'extravagance. Tenez-vous bien sur vos gardes, c'est un piège qu'il veut vous tendre. Je m'en veux de ne pas avoir osé lui adresser la parole. Cela suffit, je sais à quoi m'en tenir à présent.

Cogery.

3. Comment Paul Albert caractérise-t-il le XVIIIe siècle ?

4. Quels titres l'abbé de St. Pierre avait-il pour entrer à *l'Académie Française?* Pour quoi en fut-il exclu ? Donnez la liste de ses ouvrages.

5. Quand FONTENELLE naquit-il ? D'où était-il originaire ? A quelle famille appartenait-il ? Qu'est-ce qu'il y a de plus remarquable chez Fontenelle ? Quel genre de littérature cultiva-t-il d'abord ? Quand changea-t-il ? Quel genre cultiva-t-il ensuite ? Quels sont ses trois principaux ouvrages ?

6. Répondez aux mêmes question que ci-dessus (5) sur MONTESQUIEU.

7. Traduisez en français :—

Our family dined in the field, and we sat, or rather reclined, round a temperate repast, our cloth spread upon the hay, while Mr. Burchell gave cheerfulness to the feast. To heighten our satisfaction, two blackbirds answered each other from opposite hedges, the familiar redbreast came and picked the crumbs from our hands, and every sound seemed but the echo of tranquillity.

The Vicar of Wakefield, Chap. VIII.

FOURTH YEAR.

FRENCH.

TUESDAY, DEC. 18TH :—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M.A. B.C.L.

1. Traduisez en anglais :—

Il ne fait guère que des pochades. Quel entrain ! Quand vous n'êtes plus dans vos coulisses, ou à une table de bouillotte vous vous trouvez tout dépaysé... Ah ! vous êtes bien le fils de votre père !—Tiens, parbleu ? —Voyons ; tenez-vous donc un peu !—Toujours un livre entre les mains. —Ne m'en parlez pas...il se tuerait si on le laissait faire ; mais j'étais en train de lui dire, il y a temps pour tout.—...Seulement...Ah, il y a seulement ? Oh ! presque rien...c'est la pose que je n'aime pas...puis le fond ...les détails... ça m'a l'air un peu terne, un peu pâteux...je vous demande pardon de....Dites donc votre opinion. Du reste, en ce moment je cherche un peu la petite bête...Comment la séance n'est pas encore levée ?

Les faux bons hommes A. 1

2. Traduisez les phrases idiomatiques suivantes *en français :*

He could not stand it any longer, he was quite out of patience. I don't take it so much to heart ; do it, if you like. My sister was vexed with herself that she did not speak before. The master had hardly turned his back, before I commenced to play. We must commence afresh, since we have not succeeded ; *en anglais:* Il prit cette ferme, et la fait valoir mieux que son prédécesseur. Il tira sur nous à bout portant. Rendez-vous au raisonnement que je vous tiens, vous vous en trouverez bien Nous faisons traite sur vous, à trois jours de vue, de f. 2878.75, solde de votre compte. Je vais tâcher de me mettre au fait des devoirs de ma place.

3. Quels sont les quatre plus grands orateurs de la tribune sous la Restauration ?

4. Donnez un aperçu biographique de MANUEL. Faites connaître le grand et saisissant épisode de sa vie parlementaire.

5. Quand est-ce que naquit *Prosper Mérimée ?* Quand mourut-il ? Quel est son premier ouvrage ? Et quel est son chef-d'œuvre ? A quoi s'occupa-t-il après 1830 ? Avec quelle grande famille était-il lié ?

6. Racontez les principaux faits relatifs à la vie de LAMARTINE.

7. Quel est le poète qui a écrit " *le Roi de Rome ?* Qui était le Roi de Rome ?

8. Qui est-ce qui a écrit :

> On m'a dit l'an passé, que j'imitais Byron ;
> Vous, qui me connaissez, vous savez bien que non...
> Je hais comme la mort l'état de plagiaire.
> Mon verre n'est pas grand, mais je bois dans mon verre.

9. Quelles autres poésies ce même poète a-t-il écrites ? Quels ouvrages en prose a-t-il aussi écrits ?

10. Traduisez en français :

But though all this gave me no pleasure, it had a very different effect upon Olivia, who mistook it for humour, though but a mere act of the memory. She thought him therefore, a very fine gentleman ; and such as consider what powerful ingredients a good figure, fine clothes, and fortune are in that character, will easily forgive her. Mr. Thornhill, notwithstanding his real ignorance, talked with ease, and could expatiate upon the common topics of conversation with fluency. It is not surprising, then, that such talents should win the affection of a girl, who by education was taught to value an appearance in herself, and consequently to set a value upon it in another.

The Vicar of Wakefield, Chap. VII.

FIRST YEAR.

GERMAN.

FRIDAY, DECEMBER 21ST :—AFTERNOON, 2 TO 5.

Examiner,..... C.F.A. MARKGRAF, M.A.

1. Translate into English :—

(A) **Die Wasserschlange.**

Zeus hatte nunmehr den Fröschen einen andern König gegeben ; anstatt des friedlichen Klotzes eine gefräßige Wasserschlange.

„Willst du unser König sein," schrieen die Frösche, „warum verschlingst du uns ?"—„Darum," antwortete die Schlange, „weil ihr um mich gebeten habt.

„Ich habe nicht um dich gebeten !" rief einer von den Fröschen, den sie schon mit den Augen verschlang.—„Nicht ?" sagte die Wasserschlange. „Desto schlimmer, so muß ich dich verschlingen, weil du nicht um mich gebeten hast."

LESSING.

(B) **Knabe und Schmetterling.**

Knabe: „Schmetterling,
Kleines Ding,
Sage, wovon lebst du,
Daß du nur in Lüften schwebst ?"

Schmetterling: „Blumenduft, Sonnenschein,
Das sind die Nahrung mein."

Der Knabe, der wollt' ihn fangen,
Da bat er mit Zittern und Bangen:
„Lieber Knabe, thu' es nicht,
Laß mich spielen im Sonnenlicht.
Eh' vergeht das Morgenroth,
Lieg' ich doch schon kalt und todt."

W. HEY.

2 (*a*) Give the gender, meaning and Nom. Plu. of :—Strauch, Nachbar, Handtuch, Tuchrock, Baumblatt, Obstbaum, Nacht, Uhrschlüssel, Haarnadel, Knabe, Jahr, Vetter, Schwester, Fingerhut, Hutmacher, Apfel, Kammerfrau, Person. (*b*) Give the meaning and Nom. Sing. of :—Blumengärten, Kaufleute, Kettenbrücken, Völker, Leuchter, Hühner, Kleiderschränke, Wochentage, Thüren, Läden, Bilder, Bücher, Löwen.

3. Explain the following words, and give their meaning and derivation ;— härteſt, kürzer, Lämmchen, Vögelchen, längſtes, höchſt, Bäuerinn, gläſern, Käſtchen, Kirchlein, ſchärferer, knöchernes, Lüftchen, Büchlein, Dienerinnen, atlaſſen, Bänkchen, Körbchen, gröber, klügſt.

4. Write down the Nomin. and Accus. Sing. and Plur. of :—my good brother ; the strongest man ; her rich old aunt ; this sweet ripe fruit (Frucht, f.) ; *some* good white wine ; a broad green field (Plu. broad green fields).

5. (*a*) Express in letters :—41, 101, 1073, 62.580. (*b*) Give the *ordinals* up to 19. How are they formed from 20 upward ?

6. Parse the following verbs, and give the meaning and Present Infinitive of each ;—darf, wartet, geritten, thut, ſchreibe, mag, gebracht, ſitze, ausgegangen, tadle, gebacken, gefragt, ſchickt, gemacht, kann, gegeſſen, geſehen, gekoſtet.

7. Correct the errors in regard to the order of words in the following German sentences :—

Ihr Neffe hat geſucht Sie hier geſtern.
(Your nephew has sought you here yesterday.)

Ich will nicht glauben es, und ich habe nie noch geglaubt ſo etwas.
(I will not believe it, and I have never yet believed such a thing.)

Er muß ſein hier wieder nächſten Sommer.
(He must be here again next summer,)

8. Translate into German :—

New works are not always as good as old *ones*. April is often colder than March. Faithful friends are the best. What house is that ? Pray, read that letter ! I do not know what they want. Every one knows him. These people live contentedly. Where do you live ? They have bought a few pounds *of* tea, half a dozen *of* tumblers, fourteen ells *of* velvet, and three pairs *of* silk gloves. Have you had time to go anywhere this morning ? We have been there twice or three times, but we have never found them at home. All children like to play. They like us. Do not speak, for they will not hear ! The mother, son and daughter have come home.

SECOND YEAR.

GERMAN.

FRIDAY, DECEMBER 21ST:—AFTERNOON 2 TO 5.

Examiner,.....C. F. A. MARKGRAF, M.A.

1. Translate into English :—

(A)

„Ja," antwortete der Scheerenschleifer „das Handwerk hat einen güldenen Boden. Ein rechter Schleifer ist ein Mann, der, so oft er in die Tasche greift, auch Geld darin findet. Aber wo habt ihr die schöne Gans gekauft?"—„Die hab' ich nicht gekauft, sondern für mein Schwein eingetauscht."—„Und das Schwein?"—„Das hab' ich für eine Kuh gekriegt."—„Und die Kuh?"—„Die hab' ich für ein Pferd bekommen."—„Und das Pferd?"—„Dafür hab' ich einen Klumpen Gold, so groß als mein Kopf, gegeben."—„Und das Gold?"—„Ei, das war mein Lohn für sieben Jahre Dienst."—„Ihr habt euch jederzeit zu helfen gewußt," sprach der Schleifer, „könnt ihr's nun dahin bringen, daß ihr das Geld in der Tasche springen hört, wenn ihr aufsteht, so habt ihr euer Glück gemacht."—„Wie soll ich das anfangen?" sprach Hans.—„Ihr müßt ein Schleifer werden wie ich; dazu gehört eigentlich nichts als ein Wetzstein, das Andere findet sich schon von selbst. Da hab' ich einen, der ist schon ein wenig schadhaft, dafür sollt ihr mir aber auch weiter nichts als eure Gans geben; wollt ihr das?"—„Wie könnt ihr noch fragen," antwortete Hans, „ich werde ja zum glücklichsten Menschen auf Erden; habe ich Geld, so oft ich in die Tasche greife, was brauche ich da zu sorgen?" und reichte ihm die Gans hin.

Ext. from „Hans im Glück," by Gebrüder Grimm.

(B)

Und am Ufer der Fischer steht,
Es spielt sein Netz in den Wellen;
Umsonst ihr euch wendet und dreht,
Ihr Karpfen, ihr zarten Forellen!

Sein frevelnder Arm euch zieht
Im engen Garn ans Gestade;
Kein armes Fischlein entflieht,
Das kleinste nicht findet Gnade.

Auffsteiget kein Wasserweib
Euch zu retten, ihr Stillen, ihr Guten,
Und lockt mit dem seligen Leib
Ihn hinab in die schwellenden Fluthen.

„Ich bin der Herrscher im See,
Ein König im Reiche der Wogen!"
So spricht er und schnellt in die Höh'
Den schweren Angel im Bogen.

Ext. from „Des Fischers Haus" by G. Schwab.

2. (See Ext. A) (*a*) Ein Mann, der. Give the other cases Sing. of these words. Darin, dafür, dazu. Explain these compound words. What do they stand for? (*c*) Könnt ihr's nun dahin bringen,....habe ich Geld,....—Construe with the conjunction understood in both sentences. (*d*) Greift, findet, bekommen, gegeben, helfen, gewußt, ſprach, könnt, bringen, ſpringen, aufſteht, anfangen, müßt, werde.—Give the principal parts of each of these verbs.

3. (See Ext. B) (*a*) Und am Ufer der Fiſcher ſteht,....Umſonſt ihr euch wendet und dreht,....Aufſteiget kein Waſſerweib. Place the words in the usual order in each sentence. (*b*) Decline in both numbers:—Sein frevelnder Arm; kein armes Fiſchlein.

4. (*a*) Explain the difference between the *strong* and the *weak* declension. State also what kind of substantives belong to the one and which to the other declension. (*b*) Decline:—diejenige Frau, welche; der edle Fürſt. Show also the peculiar inflection of Herr and Herz.

5. Translate:—Come in (here)! go up (there)! he came out (here) they went out (there); they run to and fro (hither and thither); we will come over (there) to you; take that down!

6. (*a*) What is meant by *purely reflective* verbs and *proper reflective* verbs? Give examples. (*b*) Translate:—they see themselves; I saw them myself; he dresses himself; we do it ourselves. (*c*) Conjugate „ſich ſetzen," giving the 1st Sing. and 2nd Plu. of all the tenses of the Indicative.

7. (*a*) Write down the irregular forms of the following verbs.—nennen, mögen, leiden, fahren, rufen, bitten, fallen, werfen. (*b*) Give the Present and Imperfect, Ind. active (all persons), of „mitnehmen."

8. Translate into German:—

The nations in olden times were either herdsmen, hunters or husbandmen. The East and West-Indies lie in the *torrid* (hot) zone. The messenger made the journey by land and on horseback. The duties of those men (Menſch) to whom much is given, are greater than the duties of those who possess little. Is this all they promised (Perf.) you? We rejoice to hear that your sons have *safely* (happily) arrived. The whole party took a walk over the meadow and through the wood as far as (bis an) the shore of the river, and after (nachdem) *resting* (they had rested) *for* some time, they returned by (auf, Dat.) a round-about way to (nach) the fine country-house of their friendly host who received them at (am) the door.

CHEMISTRY AND NATURAL SCIENCES.

FIRST YEAR.

IN ARTS AND IN APPLIED SCIENCE.

CHEMISTRY.

WEDNESDAY, DECEMBER 19TH:—MORNING, 9 TO 12.

Examiner, ...B. J. HARRINGTON, B.A., Ph.D.

1. Distinguish between chemical and physical changes, giving examples.

2. In chemical manufactures what is understood by a By-product? give examples.

3. 20 grammes of Water are decomposed by an electric current. How many litres of Hydrogen and of Oxygen are produced?

4. Give a method for the preparation of Hydric Sulphide, and explain the use of this gas in the detection and separation of metals.

5. What gas is produced by heating Ammonium Nitrate? Give its properties.

6. Describe the detection of Iodine when free and when combined.

7. Sulphuric Acid is poured upon Bleaching Powder. Explain the changes which take place by means of equations.

8. What is Ozone? How is it detected? What is the supposed source of atmospheric Ozone?

9. The terms combustible and supporter of combustion are relative. Explain this.

10. Give the names of five of the following substances:—HgO, HNO_3, $(H_4N)Cl$, $KClO$, HF, $NaHSO_4$, $C_3H_8O_3$.

SECOND YEAR.

BOTANY.

FRIDAY, DECEMBER 14TH, 1883:—9 TO 12 A.M.

Examiner, ...D. P. PENHALLOW, B. Sc.

1. Describe the chemical and physical properties of protoplasm, and state how it may be distinguished from other vegetable substances.

2. Describe the root and its functions, and state how it is to be distinguished from the stem.

3. Describe the cell; give its component parts and the special value of each.

4. Describe the exogenous stem, its mode of growth, component tissues, and the functional importance of each.

5. Describe some of the principal methods of cell formation, and state which is the most important in general tissue formation.

6. Describe the structure of the leaf, and some of its principal modifications. Give a brief explanation of the laws of phyllotaxis.

7. Describe the vascular bundle, state how it is developed and what relation it bears to the stem and other parts of plants.

8. Describe the most important modifications of the exogenous stem, and state their special value in the economy of nature.

9. Describe the chemical and physical properties of cellulose, and show what other vegetable substances are allied to it.

10. Crystals; their composition, form and occurrence.

11. Describe the structure, origin and function of pollen.

12. Stomata: their structure, functions and occurrence.

Answers to subjects 1 to 10 required for a maximum. Remaining time may be devoted to 11 and 12.

THIRD YEAR IN ARTS AND SECOND YEAR IN APPLIED SCIENCE.

MINERALOGY.

THURSDAY, DECEMBER 20TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. Give the characters of the Tetragonal System of Crystallography.

2. Define Isomorphism and Pseudomorphism, giving examples of each.

2. Explain the following terms: Dome, Clinopinacoid, Macropinacoid, Hemitrope.

4. Give illustrations of the value of Cleavage and Streak in distinguishing minerals.

5. Give a classification of minerals based upon chemical composition.

6. Give the names and general characters of the Feldspars, and describe one speceis.

7. Give the crystalline form, hardness and specific gravity of Pyroxene, Apatite, Dolomite, Aragonite and Gypsum.

8. Name the minerals most frequently mistaken for gold, and state how you would distinguish them from that metal.

9. Describe Magnetite and Menaccanite. How would you detect the presence of Titanium in the latter?

10. Describe briefly the principal kinds of Coal, and give also their deport ment when treated with Caustic Potash.

11. Name and describe the minerals exhibited.

FOURTH YEAR IN ARTS AND IN APPLIED SCIENCE.

MINERALOGY AND GEOLOGY.

WEDNESDAY, DECEMBER 19TH :—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. Characterize the Monoclinic and Hexagonal Systems of Crystallography.

2. Describe Muscovite and Orthoclase, and explain the conversion of the latter into Kaolin.

3 How would you distinguish Aragonite from Calcite, Fluorite from Amethyst, Anhydrite from Gypsum, Asbestus from Chrysolite?

4 Name the species to which the following substanc : :—Alabaster, Satin-spar, French Chalk, Mountain Leather, Heliotrope.

5. What are the principal economic minerals of the Laurentian System, and what their ordinary modes of occurrence?

6. To what substances do Aqueous Rocks chiefly owe their colour? What are some of the circumstances determining variation of colour in these rocks?

7. Explain Concretionary Action, and enumerate the principal kinds.

8. What are the principal theories with regard to the formation of Metalliferous Veins?

9. Give the sub-divisions of the Silurian System in Canada, and the supposed equivalents in Great Britain.

10. In what geological formations in Canada are the following organic remains found?—*Asaphus Canadensis*, *Orthis Billingsi*, *Climactichnites Wilsoni*, *Phyllograptus typus*, *Pterinea demissa*, *Megalomus Canadensis*, *Eurypterus remipes*.

11. Name and briefly describe the minerals and *fossils* exhibited, referring the latter to their geological formations.

SESSIONAL EXAMINATIONS, 1884.

FIRST YEAR.

GREEK.

Examiner,.....Rev. George Cornish LL.D.

1. Translate :—

(A) οἱ δὲ ἐν οἴκῳ Ἀθηναῖοι, ἐπειδὴ ἠγγέλθη ἡ ναυμαχία, χαλεπῶς εἶχον τῷ Ἀλκιβιάδῃ, οἰόμενοι δι' ἀμέλειάν τε καὶ ἀκράτειαν ἀπολωλεκέναι τὰς ναῦς, καὶ στρατηγοὺς εἵλοντο ἄλλους δέκα, Κόνωνα, Διομέδοντα, Λέοντα, Περικλέα, Ἐρασινίδην, Ἀριστοκράτη, Ἀρχέστρατον, Πρωτόμαχον, Θράσυλλον, Ἀριστογένη. Ἀλκιβιάδης μὲν οὖν πονήρως καὶ ἐν τῇ στρατιᾷ φερόμενος, λαβὼν τριήρη μίαν ἀπέπλευσεν εἰς Χερρόνησον εἰς τὰ ἑαυτοῦ τείχη. μετὰ δὲ ταῦτα Κόνων ἐκ τῆς Ἀνδρου σὺν αἷς εἶχε ναυσὶν εἰκοσι ψηφισαμένων Ἀθηναίων εἰς Σάμον ἐπλευσεν ἐπὶ τὸ ναυτικόν. ἀντὶ δὲ Κόνωνος εἰς Ἄνδρον ἐπεμψαν Φανοσθένη, τέτταρας ναῦς ἔχοντα.

(B) αἱ τῶν Λακεδαιμονίων ἀντιτεταγμέναι ἦσαν ἅπασαι ἐπὶ μιᾶς ὡς πρὸς διέκπλουν καὶ περίπλουν παρεσκευασμέναι, διὰ τὸ βέλτιον πλεῖν. εἶχε δὲ τὸ δεξιὸν κέρας Καλλικρατίδας. Ἕρμων δὲ Μεγαρεὺς ὁ τῷ Καλλικρατίδᾳ κυβερνῶν εἶπε πρὸς αὐτὸν ὅτι εἰη καλῶς ἔχον ἀποπλεῦσαι· αἱ γὰρ τριήρεις τῶν Ἀθηναίων πολλῷ πλείονες ἦσαν. Καλλικρατίδας δὲ εἶπεν ὅτι ἡ Σπάρτη οὐδὲν μὴ κάκιον οἰκεῖται αὐτοῦ ἀποθανόντος, φεύγειν δὲ αἰσχρὸν ἔφη εἶναι. μετὰ δὲ ταῦτα ἐναυμάχησαν χρόνον πολύν, πρῶτον μὲν ἀθρόαι, ἔπειτα δὲ διεσκεδασμέναι. ἐπεὶ δὲ Καλλικρατίδας τε ἐμβαλούσης τῆς νεὼς ἀποπεσὼν εἰς τὴν θάλατταν ᾠφανίσθη Πρωτόμαχός τε καὶ οἱ μετ' αὐτοῦ τῷ δεξιῷ τὸ εὐώνυμον ἐνίκησαν, ἐντεῦθεν φυγὴ τῶν Πελοποννησίων ἐγένετο εἰς Χίον, πλείστων δὲ καὶ εἰς Φώκαιαν. οἱ δὲ Ἀθηναῖοι πάλιν εἰς τὰς Ἀργινούσας κατέπλευσαν.

(C) μὴ τοίνυν, ὦ ἄνδρες Ἀθηναῖοι, ἀντὶ μὲν τῆς νίκης καὶ τῆς εὐτυχίας ὁμοια ποιήσητε τοις ἡττημένοις τε καὶ ἀτυχοῦσιν, ἀντὶ δὲ τῶν ἐκ θεοῦ ἀναγκαίων ἀγνωμονεῖν δόξητε, προδοσίαν καταγνόντες ἀντὶ τῆς ἀδυναμίας, οὐχ ἱκανοὺς γενομένους διὰ τὸν χειμῶνα πρᾶξαι τὰ προσταχθέντα· ἀλλὰ πολὺ δικαιότερον στεφάνοις γεραίρειν τοὺς νικῶντας ἢ θανάτῳ ζημιοῦν πονηροῖς ἀνθρώποις πειθομένους.

2. (*a*) Name those of the ten generals mentioned in ext. (A) that were afterwards put to death; and state what was the real nature of the offence for which they were tried and condemned. (*b*) Οἰόμενοι δι' ἀμέλειαν κ. τ. λ. :—Write a short note on the general character and conduct of Alcibiades showing what grounds may have existed to justify the imputation here made. (*c*) ἀμέλειάν ἀκράτειαν :—Give the etymology of these words, and turn them into Latin. (*d*) τὰ ἑαυτοῦ τείχη :—Give the name from Cor. Nepos.

3. Ext. (B).—(*a*) ἐπὶ μιᾶς :—Give the import of ἐπὶ, and supply the ellipsis with μιᾶς. (*b*) πρὸς διέκπλουν καὶ περίπλουν :—explain these manœuvres. (*c*) αἱ γὰρ τριήρεις * * * ἦσαν :—What do you note in the use of the verb?

4. Ext. (C)—Explain carefully the grammatical construction of:—(*a*) τοῖς ἡττημένοις. (*b*) δόξητε. (*c*) πρᾶξαι. (*d*) προδοσίαν, ἱκανοὺς γενομένους. (*e*) στεφάνοις. (*f*) πονηροῖς ἀνθρώποις. (*g*) Derive ἀγνωμονεῖν and γεραίρειν.

5. Parse carefully the following :—προσενεχθέντων, ἐνθεμένους, ὑποσχεῖν, κωλῦσαν, ἀπῆραν, πεπονθέναι, ἐροῦντα, ἀφεῖσαν, προπιών, ἐπεσταλκέναι, ἀεήχθη, ἀπεσώθη.

6. (*a*) Give the geographical position of Methymna, Mitylene, Rhodes, Thurii, Gytheum, Phocis, Phocæa, Malea. (*b*) At what period of the Peloponnesian War does the narrative of the Hellenics begin, and of whose history is it a continuation?

7. (*a*) Decline the following :—κάλλος, κριτής, ὄρνις, λαγώς, ὁδούς, μήτηρ, and ὁ μέγας ἀνήρ. (*b*) Write down the principal Tenses (*1st Sing. Indicative*), of :—τάσσω, αἱρέω, ἵημι, παύω, βαίνω, λαμβάνω, ἐλαύνω, φέρω.

8. (*a*) Give the different meanings of ἐπὶ and παρὰ with the several cases they respectively govern. (*b*) State the distinction between the meaning and use of the negative particles οὐ and μή. Also between the Imperfect and the Aorist.

9. State the difference in meaning between :—ἔβησα and ἔβην, ἔστησα and ἔστην, πέπεικα and πέποιθα, ὁλώλεκα and ὄλωλα, ἀγαθὸς ὁ ἀνηρ and ὁ ἀγαθὸς ἀνηρ, πάντες ἄνθρωποι and πάντες οἱ ἄνθρωποι, αὐτὸς ὁ παῖς and ὁ αὐτὸς παῖς.

INTERMEDIATE EXAMINATION.

TUESDAY, APRIL 1ST :—MORNING, 9 TO 12.

GREEK.—EURIPIDES.—MEDEA.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate :—

(A) καὶ δὴ τεθνᾶσι· τίς με δέξεται πόλις ;
τίς γῆν ἄσυλον καὶ δόμους ἐχεγγύους
ξένος παρασχὼν ῥύσεται τοὐμὸν δέμας ;
οὐκ ἔστι. μείνασ' οὖν ἔτι σμικρὸν χρόνον,
ἢν μέν τις ἡμῖν πύργος ἀσφαλὴς φανῇ,
δόλῳ μέτειμι τόνδε καὶ σιγῇ φόνον·
ἢν δ' ἐξελαύνῃ ξυμφορά μ' ἀμήχανος,
αὐτὴ ξίφος λαβοῦσα, καὶ μέλλω θανεῖν,
κτενῶ σφε τόλμης δ' εἶμι πρὸς τὸ καρτερόν.
οὐ γὰρ μὰ τὴν δέσποιναν ἣν ἐγὼ σέβω
μάλιστα πάντων καὶ ξυνεργὸν εἰλόμην,
Ἑκάτην, μυχοῖς ναίουσαν ἑστίας ἐμῆς,
χαίρων τις αὐτῶν τοὐμὸν ἀλγυνεῖ κέαρ
πικροὺς δ' ἐγώ σφι καὶ λυγροὺς θήσω γάμους,
πικρὸν δὲ κῆδος καὶ φυγὰς ἐμὰς χθονός.

(B) Ἐρεχθείδαι τὸ παλαιὸν ὄλβιοι,
καὶ θεῶν παῖδες μακάρων, ἱερᾶς
χώρας ἀπορθήτου τ' ἀποφερβόμενοι
κλεινοτάταν σοφίαν, ἀεὶ διὰ λαμπροτάτου
βαίνοντες ἁβρῶς αἰθέρος, ἔνθα ποθ' ἁγνὰς
ἐννέα Πιερίδας Μούσας λέγουσι
ξανθὰν Ἁρμονίαν φυτεῦσαι·
τοῦ καλλινάου τ' ἀπὸ Κηφισοῦ ῥοὰς
τὰν Κύπριν κλῄζουσιν ἀφυσσαμέναν
χώρας καταπνεῦσαι μετρίας ἀνέμων
ἡδυπνόους αὔρας· ἀεὶ δ' ἐπιβαλλομέναν
χαίταισιν εὐώδη ῥοδέων πλόκον ἀνθέων
τᾷ σοφίᾳ παρέδρους πέμπειν ἔρωτας,
παντοίας ἀρετᾶς ξυνέργους.

(C) ΙΑ. ἀλλά σ' Ἐρινὺς ὀλέσειε τέκνων
φονία τε Δίκη.
ΜΗ. τίς δὲ κλύει σου θεὸς ἢ δαίμων,
τοῦ ψευδόρκου καὶ ξειναπάτου ;
ΙΑ. φεῦ φεῦ, μυσαρὰ καὶ παιδολέτωρ.
ΜΗ. στεῖχε πρὸς οἴκους καὶ θάπτ' ἄλοχον.
ΙΑ. στείχω, δισσῶν γ' ἄμορος τέκνων.
ΜΗ. οὔπω θρηνεῖς· μένε καὶ γῆρας.
ΙΑ. ὦ τέκνα φίλτατα. ΜΗ. μητρί γε, σοὶ δ' οὔ.

ΙΑ. κἄπειτ' ἐκτας ; ΜΗ. σέ γε πημαίνουσ'.
ΙΑ. αἰαῖ· φιλίου χρῄζω στόματος
παίδων ὁ τάλας προσπτύξασθαι.
ΜΗ. νῦν σφε προσαυδᾷς, νῦν ἀσπάζει,
τότ' ἀπωσάμενος. ΙΑ. δός μοι πρὸς θεῶν
μαλθακοῦ χρωτὸς ψαῦσαι τέκνων.
ΜΗ. οὐκ ἐστι· μάτην ἔπος ἔρριπται.

2. (*a*) Ext. (A). (1) Give the exact import of καὶ δή. (2) ἀσυλον, ἐχεγγύους,—give the derivation. (3) τόλμης,—what use of the genitive? (*b*) Ext. (B). (1) What is the subject of the ode from which this ext. is taken, and what is the connection with the plot of the Drama?

2 Note Doric forms and give Attic equivalents.

3. Translate the following extt., noting any grammatical peculiarities, or various readings, or different interpretations :—

(*a*) μή μοί τι δράσω' οἱ προσήκοντες, γένει,
μητρῷον ἐκπράσσοντες ἀνοσιον φονον.
(*b*) ἔρπε πρὸς βαλβῖδα λυπηρὰν βίου.
(*c*) ἡ δ' ἐξ ἀναύδου καὶ μύσιντος ὄμματος
δεινὸν στενάξασ' ἡ τάλαιν' ἠγείρετο.
(*d*) ἀλλὰ τῆς ἐμῆς κάκης
τὸ καὶ προέσθαι μαλθακοὺς λόγους φρενός.
(*e*) εἰκὸς γὰρ ὀργὰς θῆλυ ποιεῖσθαι γένος,
γάμους παρεμπολῶντος ἀλλοίους πόσει.
(*f*) οἶσθ' ὡς μετεύξει καὶ σοφωτέρα φανεῖ ;
(*g*) οὐδὲ παύσεται χόλου πρὶν κατασκῆψαί τινα.

4. Write short explanatory notes on :—(*a*) ἐς Ἥρας τέμενος Ἀκραίας θεοῦ. (*b*) Ἀργοῦς κάρα λειψάνῳ πεπληγμένος. (*c*) τῆς Τυρσηνίδος Σκύλλης. (*d*) Ἰνὼ μανεῖσαν ἐκ θεῶν. (*e*) Ἐρεχθείδαι θεῶν παῖδες μακάρων. (*f*) ἱερῶν ποταμῶν πόλις. (*g*) ὁ Μαίας πομπαῖος ἀναξ. (*h*) ὀμφαλὸν γῆς θεσπιῳδόν.

5. Give, as exactly as you can, the meaning, as well as the derivation of the following words :—κυανέας, Συμπληγάδας, αἰσυμνᾷ, εὐκταίαν, ἀποταυροῦται, παραμπέχειν, πλημμελές, ἀβρῶς, βαλβῖδα, φροῦδος, τέμενος, ἐπιθεάζω.

6. Parse the following verbs :—ὀλέσειε, ἤρξω, ἐθρέψατο, ἔτλης, ἐμβαλεῖν, ἀναμνησθῆς, ἀπεῖναι, τεθνᾶσι, κατιξάνθην, ἥκεις, ἥκε, ἀμφιθῇ.

7. Explain the following forms :—ἐγῳδα, κἀν, ἔκατι, οἰκοθεν, ναός, σφέ, νίν, σέθεν, μῶν, οὐτἀν.

8. Write down the scheme (1) of the Iambic Trimeter Acatalectic, and (2) of the Anapaestic Dimeter Acatalectic, indicating the isochronous feet. Scan the last four verses of ext. (A).

9. What is the construction required severally by :—ἀκούω, ἅπτεσθαι, χρῆσθαι, ἠδεσθαι, τυγχάνειν ?

10. A short account of Euripides.

THIRD YEAR.

GREEK.—ÆSCHYLUS.—PROMETHEUS—VINCTUS.

TUESDAY, APRIL 8TH :—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL D.

1. Translate :—

(A) ΠΡ. ἐλαφρὸν ὅστις πημάτων ἔξω πόδα
ἐχει παραινεῖν νουθετεῖν τε τὸν κακῶς
πράσσοντ'· ἐγὼ δὲ ταῦθ' ἅπαντ' ἠπιστάμην.
ἑκὼν ἑκὼν ἥμαρτον, οὐκ ἀρνήσομαι·
θνητοῖς δ' ἀρήγων αὐτὸς εὑρόμην πόνους.
οὐ μήν τι ποιναῖς γ' ᾠόμην τοίαισί με
κατισχνανεῖσθαι πρὸς πέτραις πεδαρσίοις,
τυχόντ' ἐρήμου τοῦδ' ἀγείτονος πάγου.
καί μοι τὰ μὲν παρόντα μὴ δύρεσθ' ἀχη,
πέδοι δὲ βᾶσαι τὰς προσερποῦσας τύχας
ἀκούσαθ', ὡς μάθητε διὰ τέλους τὸ πᾶν.
πείθεσθέ μοι, πείθεσθε, συμπονήσατε
τῷ νῦν μογοῦντι. ταὐτά τοι πλανωμένη
πρὸς ἄλλοτ' ἄλλον πημονὴ προσιζάνει.

ΧΟ. οὐκ ἀκούσαις ἐπεθώϋξας
τοῦτο, Προμηθεῦ.
καὶ νῦν ἐλαφρᾷ ποδὶ κραιπνόσυτον
θᾶκον προλιποῦσ',
αἰθέρα θ' ἁγνὸν πόρον οἰωνῶν
ὀκριοέσσῃ χθονὶ τῇδε πελῶ·
τοὺς σοὺς δὲ πόνους
χρήζω διὰ παντὸς ἀκοῦσαι.

(B) ΠΡ. λέξω τορῶς σοι πᾶν ὅπερ χρῄζεις μαθεῖν.
οὐκ ἐμπλέκων αἰνίγματ', ἀλλ' ἁπλῷ λόγῳ,
ὥσπερ δίκαιον πρὸς φίλους οἴγειν στόμα.
πυρὸς βροτοῖς δοτῆρ' ὁρᾷς Προμηθέα.
ΙΩ. ὦ κοινὸν ὠφέλημα θνητοῖσιν φανείς,
τλῆμον Προμηθεῦ, τοῦ δίκην πάσχεις τάδε ;
ΠΡ. ἁρμοῖ πέπαυμαι τοὺς ἐμοὺς θρηνῶν πόνους.
ΙΩ. οὐκουν πόροις ἂν τήνδε δωρεὰν ἐμοί ;
ΠΡ. λέγ' ἥντιν' αἰτεῖ· πᾶν γὰρ ἂν πύθοιό μου.
ΙΩ. σήμηνον ὅστις ἐν φάραγγί σ' ὤχμασε.
ΠΡ. βούλευμα μὲν τὸ Διὸς, Ἡφαίστου δὲ χείρ.
ΙΩ. ποινὰς δὲ ποίων ἀμπλακημάτων τίνεις ;
ΠΡ. τοσοῦτον ἀρκῶ σοι σαφηνίσαι μόνον.

ΙΩ. *καὶ πρός γε τούτοις τέρμα τῆς ἐμῆς πλάνης*
δεῖξον τίς ἔσται τῇ ταλαιπώρῳ χρόνος.
ΠΡ. *τὸ μὴ μαθεῖν σοι κρεῖσσον ἢ μαθεῖν τάδε.*
ΙΩ. *μήτοι μὲ κρύψῃς τοῦθ' ὅπερ μέλλω παθεῖν.*
ΠΡ. *ἀλλ' οὐ μεγαίρω τοῦδέ σοι δωρήματος.*
ΙΩ. *τί δῆτα μέλλεις μὴ οὐ γεγωνίσκειν τὸ πᾶν;*
ΠΡ. *φθόνος μὲν οὐδείς, σὰς δ' ὀκνῶ θρᾶξαι φρένας.*
ΙΩ. *μή μου προκήδου μᾶσσον ὡς ἐμοὶ γλυκύ.*
ΠΡ. *ἐπεὶ προθυμεῖ, χρὴ λέγειν· ἄκουε δή.*

2. Ext. A.—(1) In vs. 6. explain the force of the particles *μὴν* and *γέ*. (2) vs. 9,—*καὶ μοί*,—what use of the Dative? What variant here? (3) vs. 13, *ταῦτα τοί*,—what case is the Pronoun, and what is the force of *τοί*? (4) vs. 10, *πέδοι*,—parse and explain the case. (5) Show the formation of *πελῶ*, vs. 20.

3. Ext. (B).—(1) vs. 6,—Construe *τοῦ δίκην*. (2) *ἁρμοῖ*,—Give the etymology of this word. (3) *οὔκουν πόροις ἄν*,—Show the force of this expression, and how it differs from *οὔκουν ἐπείξει περιβαλεῖν* in vs. 52. (3) *ἀρκῶ σοι σαφηνίσαι*,—comment on this use of *ἀρκῶ*. (4) *μὴ οὐ γεγωνίσκειν*,—explain this use of the double negative. (5) *θρᾶξαι, μᾶσσον*,—explain these forms.

4. Translate carefully the following extt., adding a note where you think it meet on any grammatical usage, or peculiarity of expression, or various reading :—

(*a*) *ὡς ἂν διδαχθῇ τὴν Διὸς τυραννίδα στέργειν, φιλανθρώπου δε παύεσθαι τρόπου.*
(*b*) *πάντως δ' ἀνάγκη τῶνδέ μοι τόλμαν σχεθεῖν.*
(*c*) *ὅπως μὴ σαυτὸν οἰκτιεῖς ποτέ.*
(*d*) *ὡς μήτε θεὸς μήτε τις ἄλλος τοῖσδ' ἐπεγήθει.*
(*e*) *ὡς τὴν Διὸς τυραννίδ' ἐκπέρσων βίᾳ.*

5. Parse the following verbs, giving the principal parts :—*προκήδου, ἀλύξω, προσέπτα, παρεξίασι, ἄγαγες, ἐκτακείη, ποτνισσομένα, ἀπαλλαγῶ, ἦσαν, λέλακε, πημανθῇς, ἀφῖξαι.*

6. Explain the following forms as to their composition and meaning :—*νίν, ἔμπας, οὔκουν, οὐκοῦν, μήν, σκεθρῶς, δίχα, δῆθεν, ἀμοχθί, τάχα, οὐμός, ἄρα, ἄδην, πόποι.*

7. State as accurately as you can the meaning, and give the derivation of the following words :—*ἁπλῷ, ἐτήτυμα, ἀχέτας, παράκοπον ἀκικυν, ἰότατι, λεωργόν, ἀπαντλῆσαι, ἀφεγγής, παράορος, ἁπλάτου, προσείλους.*

8. (*a*) A short account of the life and times of Æschylus. (*b*) Point out the leading characteristics of—(1) the poetry ; (2) the style ; and (3) the language of Æschylus. (*c*) What improvements in the composition and representation of Tragedy were effected by him?

B.A. ORDINARY EXAMINATION, 1884.

WEDNESDAY, APRIL 16TH :—MORNING, 9 TO 12.

GREEK.— { AESCHINES.—CONTRA CTESIPHONTEM.
AESCHYLUS.—PROMETHEUS VINCTUS.

Examiner,.....REV. GEORGE CORNISH, LL.D.

Translate :—

(A) κατιδὼν δέ τις ταῦτα νομοθέτης τίθηπι νόμον καὶ μάλα καλῶς ἔχοντα, τὸν διαρρήδην ἀπαγορεύοντα τοὺς ὑπευθύνους μὴ στεφανοῦν. καὶ ταῦτα οὕτως εὖ προκατειλημμένου τοῦ νομοθέτου εὑρηνται κρείττονες λόγοι τῶν νόμων, οὓς εἰ μή τις ὑμῖν ἐρεῖ, λήσετε ἐξαπατηθέντες. τούτων γὰρ τινες τῶν τοὺς ὑπευθύνους στεφανούντων παρὰ τοὺς νόμους οἱ μὲν φύσει μέτριοί εἰσιν, εἰ δή τις ἐστὶ μέτριος τῶν τὰ παράνομα γραφόντων· ἀλλ' οὐν προβάλλονταί γε τι πρὸ τῆς αἰσχύνης. προσεγγράφουσι γὰρ πρὸς τὰ ψηφίσματα στεφανοῦν τὸν ὑπεύθυνον, ἐπειδὰν λόγον καὶ εὐθίνας τῆς ἀρχῆς δῷ. καὶ ἡ μὲν πόλις τὸ ἴσον ἀδίκημα ἀδικεῖται· προκαταλαμβάνονται γὰρ ἐπαίνοις καὶ στεφάνοις αἱ εὐθῦναι· ὁ δὲ τὸ ψήφισμα γράφων ἐνδείκνυται τοῖς ἀκούουσιν, ὅτι γέγραφε μὲν παράνομα, αἰσχύνεται δὲ ἐφ' οἷς ἡμάρτηκε. Κτησιφῶν δὲ, ὦ Ἀθηναῖοι, ὑπερπηδήσας τὸν νόμον τὸν περὶ τῶν ὑπευθύνων κείμενον καὶ τὴν πρόφασιν, ἣν ἐγὼ ἀρτίως προεῖπον ὑμῖν, ἀνελὼν, πρὶν λόγον, πρὶν εὐθύνας δοῦναι, γέγραφε μεταξὺ Δημοσθένην ἄρχοντα στεφανοῦν.

(B) Τούτῳ πατὴρ μὲν ἦν Δημοσθένης ὁ Παιανιεὺς, ἀνὴρ ἐλεύθερος· οὐ γὰρ δεῖ ψεύδεσθαι. τὰ δ' ἀπὸ τῆς μητρὸς καὶ τοῦ πάππου τοῦ πρὸς μητρὸς πῶς ἔχει αὐτῷ ; ἐγὼ φράσω. Γύλων ἦν ἐκ Κεραμέων. οὗτος προδοὺς τοῖς πολεμίοις Νύμφαιον τὸ ἐν τῷ Πόντῳ, τότε τῆς πόλεως ἐχούσης τὸ χωρίον τοῦτο, φυγὰς ἐκ τῆς πόλεως ἐγένετο θανάτου καταγνωσθέντος αὐτοῦ, τὴν κρίσιν οὐχ ὑπομείνας, καὶ ἀφικνεῖται εἰς Βόσπορον, κἀκεῖ λαμβάνει δωρεὰν παρὰ τῶν τυράννων τοὺς ὠνομασμένους Κήπους, καὶ γαμεῖ γυναῖκα πλουσίαν μὲν νὴ Δία καὶ χρυσίον ἐπιφερομένην πολὺ, Σκύθιν δὲ τὸ γένος, ἐξ ἧς γίγνονται αὐτῷ θυγατέρες δύο, ἃς ἐκεῖνος δεῦρο μετὰ πολλῶν χρημάτων ἀποστείλας συνῴκισε τὴν μὲν ἑτέραν ὁτῳδήποτε, ἵνα μὴ πολλοῖς ἀπεχθάνωμαι· τὴν δ' ἑτέραν ἔγημε παριδὼν τοὺς τῆς πόλεως νόμους Δημοσθένης ὁ Παιανιεὺς, ἐξ ἧς ὑμῖν ὁ περίεργος καὶ συκοφάντης γεγένηται Δημοσθένης. οὐκοῦν ἀπὸ μὲν τοῦ πάππου τοῦ πρὸς μητρὸς πολέμιος ἂν εἴη τῷ δήμῳ, θάνατον γὰρ αὐτοῦ τῶν προγόνων κατέγνωστε, τὰ δ' ἀπὸ τῆς μητρὸς Σκύθης, βάρβαρος ἑλληνίζων τῇ φωνῇ· ὅθεν καὶ τὴν πονηρίαν οὐκ ἐπιχώριός ἐστι.

2. Ext. (A)—(1) διαρρήδην,—give the etymology. (2) μὴ στεφανοῦν —explain this use of the negative particle. (3) εἰ δή, ἀλλ' οὐν, γέ, μεταξύ,—Give the exact import of these phrases severally. Ext. (B) —Write short explanatory notes on :—Παιανιεύς, ἀνὴρ ἐλεύθερος, ἐκ Κεραμέων, ἀπ' εἰσαγγελίας, Κήπους, συκοφάντης, τὴν πονηρίαν.

3. (*a*) Define the meaning of the following terms:—*ὁ διώκων, ὁ φεύγων, γραφή, ἐπιτιμία.* (*b*) State the difference in meaning between :—*λόγον τυχεῖν* and *λόγον διδόναι, θεῖναι νόμους* and *θέσθαι νόμους, γράφειν παρά νομα* and *γράφεσθαι παρανόμων.*

4. (*a*) *ἕκτῃ φθίνοντος τοῦ Ἐλαφεβολιῶνος μηνός* :—Give the date according to our mode of reckoning, and explain the Attic method of dividing the month. (*b*) Explain the following:—(1) *τὰ Διονύσια.* (2) *αἱ ἐκκλησίαι.* (3) *ἀπογνώτω, καταγνώτω.* (4) *ἐρανίζων στεφάνους.* (5) *προξενίας εἰρημένοι.* (5) *τραγῳδῶν ἀγωνιζομένων καινῶν.* (7) *καθ' ἑκάστην πρυτανείαν.* (*c*) Point out the distinction between *προβούλευμα, ψήφισμα,* and *νόμος.*

5. (*a*) At what date was the suit of Æschines against Ctesiphon instituted? (*b*) How long time elapsed before that trial took place? (*c*) State definitely the accusation which Æschines brought against Ctesiphon, and also the three distinct grounds on which he based it. (*d*) How was the court constituted by which the case was tried?

6. Translate :—

(C) *ἐμοὶ δὲ μήτηρ οὐχ ἁπαξ μόνον Θέμις*
καὶ Γαῖα, πολλῶν ὀνομάτων μορφὴ μία,
τὸ μέλλον ἡ κραίνοιτο προὐτέθεσπίκει,
ὡς οὐ κατ' ἰσχὺν οὐδὲ πρὸς τὸ καρτερὸν
χρείη, δόλῳ δὲ τοὺς ὑπερσχόντας κρατεῖν.
τοιαῦτ' ἐμοῦ λόγοισιν ἐξηγουμένου
οὐκ ἠξίωσαν οὐδὲ προσβλέψαι τὸ πᾶν.
κράτιστα δή μοι τῶν παρεστώτων τότε
ἐφαίνετ' εἶναι προσλαβόντα μητέρα
ἑκόνθ' ἑκόντι Ζηνὶ συμπαραστατεῖν.
ἐμαῖς δὲ βουλαῖς Ταρτάρου μελαμβαθὴς
κευθμὼν καλύπτει τὸν παλαιγενῆ Κρόνον
αὐτοῖσι συμμάχοισι. τοιάδ' ἐξ' ἐμοῦ
ὁ τῶν θεῶν τύραννος ὠφελημένος
κακαῖσι ποιναῖς ταῖσδέ μ' ἐξημείψατο.
ἐνεστι γάρ πως τοῦτο τῇ τυραννίδι
νόσημα, τοῖς φίλοισι μὴ πεποιθέναι.

(D) *ἡ σοφὸς ἢ σοφος ὃς*
πρῶτος ἐν γνώμῃ τόδ' ἐβάστασε καὶ γλώσσᾳ διεμυθολόγησεν
ὡς τὸ κηδεῦσαι καθ' ἑαυτὸν ἀριστεύει μακρῷ·
καὶ μήτε τῶν πλούτῳ διαθρυπτομένων
μήτε τῶν γέννᾳ μεγαλυνομένων
ὄντα χερνῆταν ἐρασπεῦσαι γάμων.

μήποτε μήποτέ μ', ὦ
πότνιαι Μοῖραι, λεχέων Διὸς εὐνάτειραν ἰδοισθε πέλουσαν·
μηδὲ πλαθείην γαμέτᾳ τινὶ τῶν ἐξ οὐρανοῦ.
ταρβῶ γὰρ ἀστεργάνορα παρθενίαν
εἰσορῶσ' Ἰοῦς μέγα δαπτομέναν
δυσπλάνοις Ἥρας ἀλατείαις πόνων.
ἐμοὶ δ' ὅτι μὲν ὁμαλὸς ὁ γάμος
ἀφοβος, οὐ δέδια, μηδὲ κρεισσόνων θεῶν
ἔρως ἀφυκτον δόμα προσδράκοι με.
ἀπόλεμος δὲ γ' ὁ πόλεμος, ἄπορα
πόριμος· οὐδ' ἐχω τίς ἂν γενοίμαν.
τὰν Διὸς γὰρ οὐχ ὁρῶ
μῆτίν ὅπα φύγοιμ' ἂν.

7. Ext. (C) (1) Θέμις καὶ Γαῖα, * * *μορφὴ μία*;—explain. (2) *πολλῶν ὀνομάτων*,—what genitive? (3) *προὐτεθεσπίκει*,—parse. (4) *ὑπερσχόντας—ὑπέρεχοντας*,—point out the difference between these readings;—which is preferable, and why? (5) *συμπαραστατεῖν*,—whence the use of this? Ext. (D)—Give the proverb referred to in this ext. What features of Æschylus' style are illustrated by this ext.?

8. State as accurately as you can, the meaning, and give the derivation of the following words:—*λεωργόν, ἁπλάτου, κνώδαλα, ἀκικυν, ἀλαόν ἐτήτυμα, ἄϊστον, ἀνήμεροι, ἀρθμόν, πέδοι, ἰότατι, ἀκραγεῖς.*

9. Explain the dialect of the following, severally, and give the commonly received Attic equivalents of them:—*πεδαρσίοις, μᾶσσον, ἁρμοῖ, Δᾶ, πωλεύμεναι, ἀχέτας, εἰβομένα.* Parse the following:—*βᾶσαι, φύλαξαι, προσῆξε, ἐδωρήσω, θράξαι, παρεξίασι, λέλακε, προσέπτα, ἐκτακείη, οἰκτιεῖς*—(Explain the formation of the last).

10. (*a*) The Prometheus Vinctus was the second drama of a Trilogy:—Give the Greek titles of the other two and their subjects. (*b*) Narrate briefly the legend of Prometheus. (*c*) Where is the scene of this play laid?

FIRST YEAR.

LATIN.—VIRGIL.—ÆNEID, BOOK VIII.

WEDNESDAY, APRIL 2ND :—MORNING, 9 TO 12.

Examiner,..... REV. GEORGE CORNISH, LL.D.

1. Translate :—

(A) At furiis Caci mens effera, ne quid inausum
Aut intractatum scelerisve dolive fuisset,
Quattuor a stabulis praestanti corpore tauros
Avertit, totidem forma superante iuvencas.
Atque hos, ne qua forent pedibus vestigia rectis,
Cauda in speluncam tractos versisque viarum
Indiciis raptos saxo occultabat opaco.
Quaerenti nulla ad speluncam signa ferebant.
Interea, cum iam stabulis saturata moveret
Amphitryoniades armenta abitumque pararet,
Discessu mugire boves, atque omne querelis
Inpleri nemus, et colles clamore relinqui.
Reddidit una boum vocem vastoque sub antro
Mugiit et Caci spem custodita fefellit.

(B) Vix ea fatus erat : defixique ora tenebant
Aeneas Anchisiades et fidus Achates :
Multaque dura suo tristi cum corde putabant,
Ni signum caelo Cytherea dedisset aperto.
Namque inproviso vibratus ab aethere fulgor
Cum sonitu venit, et ruere omnia visa repente,
Tyrrhenusque tubae mugire per aethera clangor.
Suspiciunt ; iterum atque iterum fragor increpat ingens.
Arma inter nubem caeli in regione serena
Per sudum rutilare vident et pulsa tonare.
Obstipuere animis alii ; sed Troius heros
Adgnovit sonitum et divae promissa parentis.
Tum memorat : Ne vero, hospes, ne quaere profecto,
Quem casum portenta ferant : ego poscor Olympo.
Hoc signum cecinit missuram diva creatrix,
Si bellum ingrueret, Volcaniaque arma per auras
Laturam auxilio.

2. (*a*) Ext. (B). (1) *putabant* * * *dedisset*:—complete the hypothetical sentence. (2) *Alii*,—for what used? (3) *Olympo*,—what case, and why?

(*b*) Define *Enallage*, and point out instances in the above extt.

3. Translate carefully the following extt., noting the construction of the words in Italics :—

(*a*) Ergo iter inceptant *rumore secundo*.
(*b*) Praecipuum *toro* et *villosi pelle* leonis.
Accepit Ænean *solioque* invitat *acerno*.
(*c*) Nuntia ventura Ascanio *rerumque patrisque*.
(*d*) Propiusque *periclo* it timor.
(*e*) *Arcadii miserescite regis*.
(*f*) At tu *dictis* Albane *maneres*.

4. (*a*) Write down the name and scale of the metre used by Virgil. (*b*) Scan the last four vss. of ext. (B), carefully marking the feet and quantities, and naming the last verse.

5. Give the etymology and meaning of :—fata, discinctos, caelatus rostris, rima, virgatis, Salios, pictis, larem, asylum, argiletum, barathrum.

6. Parse the following verbs, giving the principal parts :—Repercussum, redeuntibus, delegere, subvectus, celebrabere, sterneret, egere, pepigi, suspensam, deprensum, insueta, detecta.

7. Write short explanatory notes (geographical) on the following, giving modern names where you can :—Araxes, Rhenus bicornis, Actius Apollo, Leucaten, Cytherea, Praeneste, Tirynthius.

8. (*a*) Give (1) the Declension, (2) the Gender, (3) the meaning, and (4) the *Genitive Sing.* and *Plu.* of :—*Nauta, agger, arx, cor, mas, pecus* (both), *lapis, arcus*. (*b*) Decline :—*tu, is, iste, idem, uter*. (*c*) Write down the principal parts of :—*cado, edo* (both), *posco, vendo, tero, sero* (both), *vinco*.

9. What cases do the following adjectives, respectively, govern? *similis, plenus, dignus, utilis, memor*. (*b*) Name the classes of verbs which govern severally, (1) the Dative ; (2) double Accusative ; and (3) the Ablative ; and give three instances of each class.

10. Turn the following into Latin :—

1. One of the consuls was slain in battle. 2. Tarquin, the seventh of the Roman Kings, was driven from the city. 3. Hannibal was a general of consummate genius, who conquered the Romans in many battles. 4. Socrates, the Philosopher, was accused of impiety, and was condemned to death by the Athenians. 5. The king deprived his people of freedom. 6. He returned as quickly as he could to the city, and staid there but a very short time. 7. All the bravest soldiers died from fatigue and hunger. 8. Cato was a man of remarkable foresight and industry in all things. 9. The general having received this intelligence, led forth all his soldiers to battle. 10. A certain Athenian whose name was Cimon was so liberal that he gave his gardens as a present to the people.

FIRST YEAR.

HISTORY.--HISTORY OF GREECE AND ROME.

THURSDAY, APRIL 3RD :—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. (*a*) What is meant by the *Mythical Age?* (*b*) Who was Hellen, and where was the traditional seat of his kingdom? (*c*) Who was Cadmus, and whence and whither was he said to have come? 2. (*a*) Mention some facts which show advancement in arts and civilization in the *Heroic Age*. (*b*) What were the position, rights and functions, severally, of (1) the *βασιλεύς* (2) the *βουλή* and (3) the *ἀγορά*.

3. Name the four great Grecian Festivals, and comment on their political importance and advantages.

4. (*a*) Name and describe the several classes into which the population of Laconia was divided. (*b*) Write a note on Lycurgus and his Legislation.

5. The Legislation and reforms of Draco, Solon, and Cleisthenes, at Athens.

6. (*a*) Give an account of the foundation of Rome, and of its first form of government. (*b*) By what events was this form of government brought to an end? (*c*) Mention important events that took place during the period of this form of government.

7. (*a*) Name the most important wars by which Rome gained the supremacy over the various states of Italy. (*b*) At what date was her sovereignty over the whole peninsula established?

8. What was the original function of the Tribunes of the Plebs?

9. Define the meaning of *Leges Agrariæ* and *Ager Publicus*.

10. Under what political and social disabilities were the early plebeians placed? Enumerate, giving dates, the principal laws by which those disabilities were removed.

11. Give the geographical position of :—Sardis, Syracuse, Tibur Mycale, Præneste, Marathon, Thermopylae, Platæa, Thurii, Phocæa.

INTERMEDIATE EXAMINATION.

LATIN.—HORACE.—EPISTLES, BOOK I.

WEDNESDAY, APRIL 2ND :—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D

1. Translate :—

(A) I nunc, argentum et marmor vetus aeraque et artes
Suspice, cum gemmis Tyrios mirare colores ;
Gaude quod spectant oculi te mille loquentem ;
Navus mane forum et vespertinus pete tectum,
Ne plus frumenti dotalibus emetat agris
Mutus et indignum quod sit pejoribus ortus
Hic tibi sit potius quam tu mirabilis illi.
Quidquid sub terra est in apricum proferet aetas ;
Defodiet condetque nitentia. Cum bene notum
Porticus Agrippae et via te conspexerit Appi,
Ire tamen restat Numa quo devenit et Ancus.
Si latus aut renes morbo tentantur acuto
Quaere fugam morbi. Vis recte vivere : quis non ?
Si virtus hoc una potest dare, fortis omissis
Hoc age deliciis. Virtutem verba putas et
Lucum ligna : cave ne portus occupet alter,
Ne Cibyratica, ne Bithyna negotia perdas ;
Mille talenta rotundentur, totidem altera, porro et
Tertia succedant et quae pars quadrat acervum.

(B) Alter in obsequium plus aequo pronus et imi
Derisor lecti sic nutum divitis horret,
Sic iterat voces et verba cadentia tollit,
Ut puerum saevo credas dictata magistro
Reddere vel partes mimum tractare secundas.
Alter rixatur de lana saepe caprina,
Propugnat nugis armatus : "Scilicet ut non
Sit mihi prima fides, et vere quod placet ut non
Acriter elatrem ! Pretium aetas altera sordet."
Ambigitur quid enim ? Castor sciat an Dolichos plus ;
Brundisium Minuci melius via ducat an Appi.
Quem damnosa Venus, quem praeceps alea nudat,
Gloria quem supra vires et vestit et ungit,
Quem tenet argenti sitis importuna famesque,
Quem paupertatis pudor et fuga, dives amicus
Saepe decem vitiis instructior odit et horret.

2. Translate carefully the following extracts, noting any grammatical peculiarities, or varieties of reading or punctuation :—

(*a*) Virtus est vitium fugere et sapientia prima
Stultitia caruisse.
(*b*) Si curatus inaequali tonsore capillos,
Occurri rides.
(*c*) Qui timet his adversa, fere miratur eodem
Quo cupiens pacto ; pavor est utrobique molestus
Improvisa simul species exterret utrumque.
(*d*) Abi, quaere, et refer, unde domo, quis,
Cuius fortunae, quo sit patre quove patrono.
(*e*) Fidis offendar medicis, irascar amicis,
Cur me funesto properent arcere veterno.
(*f*) Strenua nos exercet inertia ; navibus atque
Quadrigis petimus bene vivere.
(*g*) Ne studio nostri pecces, odiumque libellis
Sedulus importes, opera vehemente minister.
(*h*) Sit spes fallendi, miscebis sacra profanis ;
Nam de mille fabae modis cum surripis unum,
Damnum est non facinus mihi pacto lenius isto.

3. (*a*) In ext. (A). Write short notes on :—(1) Porticus Agrippae. (2) Via Appi. (3) Cibyratica, Bithyna negotia. (*b*) In ext. (B). Explain : — (1) Imderisor lecti. (2) Dictata. (3) Partes secundas. (4) De lana caprina. (Give the equivalent of this in Greek and English proverbs). (5) Castor an Dolichos. (*c*) Explain also the following :—(1) Nummos alienos pascet. (2) Threx erit. (3) Prœlia campestria. (4) Nil extra numerum modumque. (5) Utro laudabit pollice ludum.

4. Give the exact meaning and derivation of the following :—Laverna, lamna, barathrum, praesepe, jugis (aquae), deversoria, ephippia, tesca, lamas, campestre, caminus, brumam.

5. Parse the following :—Percontabere, fugito, reprendes, unctis, detulerit, utere, mirabere, momorderit, contuderit, intonsum, cessatum, subisti.

6. (*a*) Write down the *Gen. Sing.* and *Plu.* of :—Pulvis, pugnax, sodalis, frux, respublica. (*b*) Decline :—glomus, penus, creber, excors. (*c*) Write down the *Pres. Inf.* of the following participles :—nactus, pactus, fatus, satus, ultus, adultus. (*b*) The *Perf.* and *Supine* of :—prandeo, spondeo, pendeo, pango, pello, digno.

7. Cite words ἅπαξ λεγόμενα in these epistles.

INTERMEDIATE EXAMINATION

LATIN PROSE COMPOSITION.

THURSDAY, APRIL 3RD :—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

Translate into Latin :—

(A) Romulus was a just King, and gentle to his people. In his wars he was very successful, and enriched his people with the spoils of their enemies. At last, after he had reigned for nearly forty years, it chanced that one day he called his people together in the field of Mars ; when, all on a sudden, there arose a dreadful storm, and all was dark as night, and the rain and thunder and lightning were so terrible that all the people fled from the field, and ran to their several homes. At last the storm was over, and they came back to the field of Mars, but Romulus was nowhere to be found.

(B) Sophocles composed tragedies up to extreme old age. And when on account of this pursuit, it was thought that he was neglecting the management of his own affairs, he was summoned to trial by his sons, in order that the judges might remove him, on the ground of imbecility, from the management of his business, when the old man is said to have recited to the judges the play which he held in his hands, and which he had composed last, the Œdipus Coloneus, and to have asked whether it seemed to them to be the production of an imbecile. On its recital he was, by the verdict of the judges, set at liberty.

THIRD YEAR.

LATIN.—PLAUTUS.—AULULARIA.

WEDNESDAY, APRIL 9TH : MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate :—

(A) I sane cum illo, Phrygia. Tu autem, Eleusium,
huc intro abi ad nos. CO. O Strobile subdole,
huccine detrusti me ad senem parcissumum,
ubi, si quid poscam, usque ad ravim poscam prius
quam quidquam detur. STR. Stultus et sine gratia's.
tibi recte facere! quando quod facias, perit.
CO. Qui vero? STR. Rogitas? Iam principio in ædibus
turba istic nulla tibi erit. Si qui uti voles,
domo abs te afferto, ne operam perdas poscere.
Hic apud nos magna turba ac magna familia'st,

suppellex, aurum, vestis, vasa argentea :
ibi si perierit quidpiam (quod te scio
facile abstinere posse, si nihil obviam'st),
dicant : coci abstulerunt, comprehendite,
vincite, verberate, in puteum condite ! 15
Horum tibi istic nihil eveniet : quippe qui
ubi quid subrupias, nihil est. Sequere hac me. co. Sequor.

(B) ME. Quid tu te solus e senatu sevocas ?
EU. Pol ego, ut te accusem, mecum meditabar. ME. Quid est ?
EU. Quid sit me rogitas ? qui mihi omnis angulos
furum implevisti in ædibus, misero mihi
qui intromisisti in aedis quingentos cocos 5
cum senis manibus, genere Geryonaceo
quos si Argus servet, qui oculeus totus fuit,
(quem quondam Ioni Iuno custodem addidit),
is nunquam servet. præterea tibicinam
quæ mi interbibere sola, si vino scatat, 10
Corinthiensem fontem Pirenen potest.
Tum obsonium autem pol vel legioni sat est.
ME. Etiam agnum misi. EU. Quo quidem agno sat scio
magis curionem nusquam esse ullam beluam.
ME. Volo ego ex te scire qui sit agnus curio. 15
EU. Quia ossa atque pellis totust : ita cura macet.
quin exta inspicere in sole etiam vivo licet :
ita is pellucet quasi laterna Punica.

2. (*a*) Ext. (A)—Explain the uses of the Infinitive in vss. 6 and 9. (*b*) Ext. (B)—(1) *meditabar*,—give the literal meaning, and the Greek cognate form. (2 Explain the uses of the Dative in vss. 3, 4, and 10. (3) Explain the mythological references in vss. 6-8. (4) *Curio*,—Explain. (5) *Quin*,—give derivation and meaning. (6) *Vivo*,—what case ?

3. Translate carefully the following extracts, adding an explanatory note on any peculiarity of expression :—(*a*) Nam qua me nunc causa extrusisti ex aedibus ? (*b*) Quod quispiam ignem quaerat, extingui volo, ne causae quid sit quod te quisquam quaeritet. (*c*) Ita aequomst, quod in rem utrique arbitremur, et mihi te et tibi me consulere et monere. (*d*) Hau decorum acinus tuis factis facis, ut inopem atque innoxium abs te atque abs tuis me fnrideas.

4. Write explanatory notes on the meaning of the following phrases :—(1) Lar familiaris. (2) Cereris vigiliis. (3) Philippum regem. (4) Abstinebit censione bubula. (5) Disputata est ratio. (6) Quam volsus ludiust. (7) Trium litterarum homo. (8) Cocus nundinalis. (9) Scribam dicam.

5. Explain the following words, both as to meaning and derivation:—Salutigerulos, aurifex, ciniflones, patagiarii, flammearii, propolæ, manuleatii, phylacistæ, bellum, edepol, mecastor, secus.

6. (*a*) Parse, and give the ordinary forms of:—Med, scibas, duim, Fide, mutassis, ausim, fuat, faxint, respexis, face, cedo, sis, afferrier. (*b*) What were the original terminations of the Perf. Subj. and the Fut. Perf?

7. (*a*) Write a sketch of the life of Plautus, and name the other Roman writers of Dramatic Literature. (*b*) To what department of Greek Literature, and of what period, were they indebted for the plots and characters of their plays?

8. Translate into Latin:—

Marcus Livius, after returning from the Illyrian war, was accused of dividing the enemy's spoils unjustly, and was condemned by a sentence of the whole people;—a disgrace which he took so much amiss that he not only retired into the country, but also, for upwards of eight years, avoided all intercourse with men. At length he was prevailed on to return to the city and was offered the consulship. When all urged him to accept this office, he is said to have spoken thus:—"If I am worthy of being raised to this honour, why were you so unjust as to condemn me. If, on the other hand, I was deservedly punished, do you think I ought to be again entrusted with power?" The Senators bade him remember, that it was the part of a good citizen to forget the injuries inflicted by a fickle people, and Livius was at length induced to become the colleague of Caius Claudius.

B. A. ORDINARY EXAMINATION.

THURSDAY, APRIL 17TH:—MORNING, 9 TO 12.

LATIN.—{ TACITUS.—ANNALS, BOOK II.
JUVENAL.—SATIRES, VIII. AND X.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate:—

(A) Proximo senatus die multa in luxum civitatis dicta a Q. Haterio consulari, Octavio Frontone prætura functo; decretumque ne vasa auro solida ministrandis cibis fierent, ne vestis Serica viros fœdaret. Excessit Fronto, ac postulavit modum argento, supellectili, familiæ: erat quippe adhuc frequens senatoribus, si quid e re publica crederent, loco sententiæ promere. Contra Gallus Asinius disseruit: auctu imperii adolevisse etiam privatas opes, idque non novum sed e vetustissimis moribus: aliam apud

Fabricios, aliam apud Scipiones pecuniam ; et cuncta ad rem publicam referri, qua tenui angustas civium domos, postquam eo magnificentiæ venerit, gliscere singulos. Neque in familia et argento, quæque ad usum parentur, nimium aliquid aut modicum nisi ex fortuna possidentis. Distinctos senatus et equitum census, non quia diversi natura, sed ut, qui locis ordinibus dignationibus, antistent et aliis, quæ ad requiem animi aut salubritatem corporum parentur, nisi forte clarissimo cuique plures curas, majora pericula subeunda, delenimentis curarum et periculorum carendum esse. Facilem adsensum Gallo sub nominibus honestis confessio vitiorum et similitudo audientium dedit.

(B) Igitur oram Lyciæ ac Pamphyliæ prælegentes, obviis navibus quæ Agrippinam vehebant, utrimque infensi arma primo expediere : dein mutua formidine non ultra jurgium processum est, Marsusque Vibius nuntiavit Pisoni, Romam ad dicendam causam veniret. Ille eludens respondit adfuturum, ubi prætor, qui de veneficiis quæreret, reo atque accusatoribus diem prodixisset. Interim Domitius Laodiciam urbem Syriæ appulsus, cum hiberna sextæ legionis peteret, quod eam maxime novis consiliis idoneam rebatur, a Pacuvio legato prævenitur. Id Sentius Pisoni per litteras aperit, monetque ne castra corruptoribus, ne provinciam bello tentet. Quosque Germanici memores aut inimicis ejus adversos cognoverat, contrahit, magnitudinem imperatoris identidem ingerens et rem publicam armis peti ; ducitque validam manum et prœlio paratam. Nec Piso, quamquam cœpta secus cadebant, omisit tutissima e præsentibus, sed castellum Ciliciæ munitum admodum, cui nomen Celendris, occupat. Nam admixtis desertoribus, et tirone nuper intercepto suisque et Plancinæ servitiis, auxilia Cilicum, quæ reguli miserant, in numerum legionis composuerat.

2. Write short explanatory notes on the following :—(1) Vestis Serica. 2) Loco sententiæ. (3) Distinctos senatus et equitum census. (4) Praelegentes. (5) Ludos circences eburna effigies praeiret. (6) Saliari carmine. (7) Sacerdotum Augustalium locis. (8) Remmius evocatus. (9) Petita in fiscum. (10) Ductu Germanici, auspiciis Tiberii.

3. Comment on the peculiarities of the style of Tacitus, and on the historical value of his writings.

4. Translate :—

(C) Exspectata diu tandem provincia quum te
Rectorem accipiet, pone iræ fræna modumque,
Pone et avaritiæ : miserere inopum *sociorum ;*
Ossa vides regum vacuis exsucta medullis.
Respice, quid moneant leges, quid *curia* mandet,
Præmia quanta bonos maneant, quam fulmine justo
Et Capito et Numitor ruerint, damnante Senatu,
Piratæ Cilicum. Sed quid damnatio confert,
Quum Pansa eripiat, quidquid tibi Natta reliquit ?

Præconem, Chærippe, tuis circumspice pannis,
Jamque tace: furor est post omnia perdere *naulum*.

Non idem gemitus olim, neque vulnus erat par
Damnorum sociis florentibus et modo victis.
Plena domus tunc omnis, et ingens stabat acervus
Nummorum, Spartana *chlamys*, *conchylia* Coa,
Et cum *Parrhasii tabulis signisque Myronis*
Phidiacum vivebat *ebur*; nec non *Polycleti*
Multus ubique *labor*; raræ sine Mentore mensæ.
Inde Dolabella est atque hinc Antonius, inde
Sacrilegus Verres: referebant navibus altis
Occulta spolia et plures de pace triumphos.

(D) Incolumi Troja Priamus venisset ad umbras
Assaraci, magnis solemnibus, Hectore funus
Portante ac reliquis fratrum cervicibus, inter
Iliadum lacrimas, ut primos edere planctus
Cassandra inciperet scissaque Polyxena palla,
Si foret exstinctus diverso tempore, quo non
Cœperat audaces Paris ædificare carinas.
Longa dies igitur quid contulit? omnia vidit
Eversa et flammis Asiam ferroque cadentem.
Tunc m'les tremulus posita tulit arma tiara
Et ruit ad te aram summi Jovis, ut vetulus bos,
Qui domi cultris tenue et miserabile collum
Præbet, ab ingrato jam fastiditus aratro.
Exitus ille utcunque hominis: sed torva canino
Latravit rictu, quæ post hunc vixerat, uxor.

5. (*a*) Comment briefly on the meaning of the words in Italics in ext. (C). (*b*) Explain the following:—(*a*) Decies centena dabuntur. (*b*) Dextra computat annos. (*c*) Quot nunciet horas. (*d*) Stigmate dignum. (*e*) Totis Quinquatribus. (*f*) Quos sportula fecit amicos. (*g*) Frangenda imagine.

6. Derive, and define the meaning of:—Induperator, stemmata, nanus, cerdoni, mirmillonis, tomacula, ephebum, luscum, sarcophago, cachinni, naulum, caminis, caballis, coenacula, diadema, alapas, triscurria, ergastula. Name derivations in English from any.

7. What are the rules for the *Sequence of Tenses* in Latin?

8. Specify the cases which the following words severally are construed with:—expers, patiens, æqualis, refert, tenus, affinis, utor, vescor.

B.A. ORDINARY EXAMINATION,
LATIN PROSE COMPOSITION.

THURSDAY, APRIL 17TH :—AFTERNOON, 2 TO 4.

Examiner,..... .....REV. GEORGE CORNISH, LL.D.

Translate into Latin :—

Mary, Queen of England, the first of that name, reigned but five years and a few months, and died in the forty-second year of her age, in the year of our Lord 1558. Various and very different were the opinions concerning the cause of her death, all of which it is neither easy nor necessary to mention. She herself, two or three hours before she expired, being asked to calm her fears, is said to have spoken thus : "My friends, I know that I shall soon die, nor can I be brought to believe that you who endeavour to console me, see any other indication. Your labour is altogether useless and the whole of it may well be spared. At present you know not what my distemper is ; but when once I am dead, cause my body to be dissected, and you will find the name of Calais written on my heart."

B.A. ORDINARY EXAMINATION, 1884.
GREEK AND ROMAN HISTORY.

FRIDAY, APRIL 18TH :—MORNING, 9 TO 12.

Examiner,..... .....REV. GEORGE CORNISH, LL.D.

1. The causes which led to the decline and fall of the supremacy of Athens in the affairs of Greece.

2. Write descriptive accounts of (1) the battle of Corinth ; (2) of Cnidus ; and (3) of Coronea.

3. Comment on the terms and character of the Peace of Antalcidas.

4. The geography, political and maritime importance of the Chalcidic Peninsula.

5. Trace the growth of the power of Macedon, and give your estimate of the character and policy of Philip.

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1. The causes of degeneracy in the political and social life of Rome, as indicated by Tacitus and Juvenal.

2. By what steps did Augustus win the foremost place at Rome, and by what policy did he consolidate his [illegible].

3. The character of Tiberius as depicted by his admirers and detractors, severally. Is Tacitus impartial in dealing with him ?

4. Name the twelve Cæsars in the order of their succession, giving dates.

5. (*a*) Give an account of the contests for the throne in the years A. D. 68-70. (*b*) What important events happened in the reigns of Vespasian and Titus ?

MATHEMATICS AND NATURAL PHILOSOPHY.

FIRST YEAR.

GEOMETRY.

TUESDAY, APRIL 15TH:—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. In every triangle the square on the side subtending an acute angle is less than the squares on the sides containing that angle by twice the rectangle contained by either of these sides, and the straight line intercepted between the perpendicular let fall on it from the opposite angle, and the acute angle.

2. The angle between the tangent to a circle and a chord through the point of contact is equal to the angle in the alternate segment of the circle.

3. If a point divide the base of a triangle into segments which have the same ratio as the other two sides of the triangle, the line joining the point to the vertical angle shall bisect that angle.

4. Triangles which have one angle of the one equal to one angle of the other, and their sides about the equal angles reciprocally proportional, are equal in area.

5. If from the vertical angle of a triangle a perpendicular be drawn to the base, the rectangle contained by the sides of the triangle shall be equal to the rectangle contained by that perpendicular and the diameter of the circumscribed circle.

6. Describe a circle which shall touch a given straight line and pass through two given points on the same side of the line.

7. The straight lines which join the middle points of the sides of a triangle to the opposite angles meet in a point.

8. A parabola being considered as a plane section of a cone, prove its fundamental property.

9. Tangents at the extremities of a focal chord intersect on the directrix.

10. Prove that the area of any segment of a parabola is equal to two thirds of the area of the circumscribed triangle.

FIRST YEAR.

TRIGONOMETRY (First Paper)—ALGEBRA.

SATURDAY, APRIL 19TH :—MORNING, 9 TO 12.

Examiner, ... G. H. CHANDLER, M.A.

1. Distinguish between positive and negative lines, and between positive and negative angles.

2. State and prove the rules for changing from radians to degrees, and *vice versa*.

3. Given $\sin A = \frac{1}{\sqrt{3}}$, calculate $\cos A$, and $\tan A$.

4. Prove that

(*a*) $\tan^2 A + \cot^2 A = \sec^2 A \operatorname{cosec}^2 A - 2$,

(*b*) $\tan^2 A - \sin^2 A = \sin^4 A \sec^2 A$.

5. Prove the formulæ

(*a*) $\sin (A + B) = \sin A \cos B + \cos A \sin B$,

(*b*) $\sin A + \sin B = 2 \sin \frac{A+B}{2} \cos \frac{A-B}{2}$,

(*c*) $\sin 2A = 2 \sin A \cos A$,

(*d*) $\sin A + \cos A = \sqrt{2} \sin (45^\circ + A)$.

6. If $\sin A = \frac{1}{3}$, and $\sin B = \frac{2}{3}$, calculate $\cos (A + B)$.

7. Simplify

$$\frac{2(x^2 - \frac{1}{4})}{2x + 1} + \frac{1}{2} \text{ and } \frac{a^3 + 3a^2x + 3ax^2 + x^3}{x^3 - y^3} \div \frac{(a+x)^2}{x^2 + xy + y^2}$$

8. Reduce $\frac{2x^3 - x^2 + x + 1}{2x^3 + 3x^2 + 3x + 1}$ to its lowest terms.

9. Which is greater, $\sqrt{2} \div \sqrt[3]{3}$ or $\sqrt{3} \div \sqrt[3]{5}$?

10. Solve the equations

(*a*) $\frac{x}{a-x} = \frac{a-x}{x} - \frac{2a-b}{2x}$,

(*b*) $\sqrt{x} + \sqrt{a-x} = 2(\sqrt{x} - \sqrt{a-x})$,

(*c*) $\frac{2}{x + \sqrt{2 - x^2}} + \frac{2}{x - \sqrt{2 - x^2}} = 2x$.

(*d*) $\frac{5x}{x+4} - \frac{3x-2}{2x-3} = 2$.

11. Also the simultaneous equations

$$\left.\begin{aligned} x + y + z &= 5 \\ x + y &= z - 7 \\ x - 3 &= y + z \end{aligned}\right\}, \quad x^2 y - x y^2 = 6 = 2xy.$$

12. Find a number which is the same multiple of 7 as its excess above 20 is of its defect from 30.

FIRST YEAR.

TRIGONOMETRY.—(*Second Paper*).

TUESDAY, APRIL 22ND :—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Find by logarithms the cube root of .01 and verify your result by multiplication.

2. Solve the triangles in which

(1) a 445, b=565, A=44° 29′ 53,″

(2) a=53.24, b=31.27, C= 126° 36′ 6″,

(3) a=15.32, b=21.56, c=16.22.

3. From each of two ships a mile apart, the angle which is subtended by the other ship, and a beacon on shore is observed, these angles are 55° and 62° 30′. Determine the distances of the ships from the beacon.

4. A flag-staff 20 feet high stands on a wall 40 feet high. At a point A on a level with the bottom of the wall the flag staff subtends an angle 10°. Find the distance of A from the wall.

5. A ship and a steamer leave the harbor together; the course of the steamer is S. b. W ¼ W. and her rate 10½ knots; that of the ship S.E. b. E. and her rate 6 knots; what will be their distance apart at the end of 2½ hours, and what the bearing of the ship from the steamer?

6. Investigate a formula for calculating the distance of the visible sea horizon.

SECOND YEAR.

MECHANICS.

TUESDAY, APRIL 15TH :—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Explain velocity, acceleration, force, and energy; and mention the units which are commonly used in measuring these quantities.

2. A body weighing 50 lbs. is acted on by a constant force which acts for 5 seconds and then ceases to act; the body moves through 60 ft. in the next 2 seconds. Express the force in poundals and also in pounds.

3. A body is projected vertically upward with a velocity of 100 ft. per second; how high will it rise in 2 seconds, and through what space will it pass in the last second before it comes to the ground?

4. A point is kept at rest by forces of 6, 8, and 11 lbs.; find the angle between the forces 6 and 8.

5. A uniform rod of unknown length, weighing $1\frac{1}{2}$ lb. per foot, rests on a fulcrum 4 ft. from one end; find what weight suspended from that end will keep it at rest, the pressure on the fulcrum being 75 lbs.

6. A weight of 7 lbs. rests upon a plane inclined at an angle of 30° to the horizon; what force, acting parallel to the horizon, will just prevent its sliding down the plane, the coefficient of friction being $\frac{1}{4}$; and what is the least force which, acting parallel to the plane, will draw it up?

7. Find the centre of gravity of a triangle.

8. The pressure of water used for working hydraulic cranes is 700 lbs. on the square inch; to what *head* does this correspond.

9. Explain what is meant by centre of pressure, and how it is found.

10. A coin composed of platinum and silver is of exactly the same size and weight as a sovereign; show that the weights of the platinum and silver are as 4 : 1, the specific gravities of platinum, silver and gold being 21, $10\frac{1}{2}$, and $17\frac{1}{2}$ respectively.

SECOND YEAR.

CALCULUS.

SATURDAY, APRIL 19TH :—MORNING, 9 TO 12.

Examiner.....G. H. CHANDLER, M.A.

1. Investigate the formulæ for differentiating rs, s^m, and $\tan^{-1} x$.

2. Shew that

(*a*) $$d\left(\frac{x^2 - x + 1}{x^2 + x - 1}\right) = \frac{2x(x-2)\,dx}{(x^2 + x - 1)^2},$$

(*b*) $$d\left(\frac{x \log x}{1 - x} + \log(1 - x)\right) = \frac{\log x\, dx}{(1-x)^2},$$

(*c*) $$d\left(\tan^{-1}\frac{2x}{1 - x^2}\right) = \frac{2\,dx}{1 + x^2},$$

(*d*) $$d\left(\log \sin^2 x\right) = 2 \cot x\, dx.$$

3. Assuming that

$$\log(1 + x) = x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \ldots\ldots,$$

deduce the series

$$\log(1+y) = \log y + 2\left\{\left(\frac{1}{1 + 2y}\right) + \frac{1}{3}\left(\frac{1}{1 + 2y}\right)^3 + \ldots.\right\},$$

and hence calculate log 2.

4. State the rule for finding points of inflexion, and show that the curve $x^3 + y^3 = a^3$ meets the axes in points of inflexion.

5. Find the fraction which exceeds its square by the greatest possible quantity.

6. A person, 3 miles out at sea, wishes in the least possible time to reach a point on the coast 5 miles from the nearest point; he can pull 4 miles an hour, but can walk 5 miles an hour; where should he land?

7. Integrate $\sqrt{1+x^2} \cdot x\,dx$, $\cos 2x\,dx$, $\frac{x\,dx}{x^2-4}$, $\frac{dx}{x^2-4}$.

8. Show that

(*a*) $$\int \frac{(3x^2-1)\,dx}{x(x-1)(x+1)} = \log(x^3 - x),$$

(*b*) $$\int \sin^3 x\,dx = -\cos x + \tfrac{1}{3}\cos^3 x.$$

9. Find the area included between the curve $y^2(1-x^2) = 4$ and its asymptotes.

10. Prove that the volume of a prolate spheroid is two-thirds of the volume of the circumscribed cylinder.

SECOND YEAR.

ANALYTIC GEOMETRY.

TUESDAY, APRIL 22ND:—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Find the equation of a straight line given—

(1) The intercepts on the axes.

(2) The co-ordinates of two points on the line.

2. Find the angle between the lines $3x + y = 7$, and $2x - y = 3$; also their point of intersection, and the distance of that point from the origin.

3. Prove the formula for the area of a triangle in terms of the co-ordinates of its vertices.

4. The equation of a chord of the circle $x^2 + y^2 = 100$ is $7x + y = 50$; find the equation of the circle which has this chord for diameter.

5. Find the equations of the tangents and normal to the circle $(x-2)^2 + (y-3)^2 = 10$ at the point (5, 4).

6. Given the base and ratio of the sides of a triangle, find the locus of the vertex.

7. Find the equation of a parabola which is described about a triangle whose vertices are (0.0), (3, 2), (3,—2).

8. What are the equations of the tangents to the ellipse $x^2 + 3y^2 = 3$ which are inclined at an angle of 45° to the major axis?

9. Show that $x \pm y = \pm\sqrt{a^2 + b^2}$ represents the sides of the square described about the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$.

10. Prove that the tangents at the extremities of the latus rectum of an ellipse intercept on the minor axis a length equal to the major axis.

11. Prove that the distance of either focus of a hyperbola from an asymptote is equal to half the conjugate axis.

THIRD YEAR.

SPHERICAL TRIGONOMETRY AND PRACTICAL ASTRONOMY.

TUESDAY, APRIL 15TH:—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Explain what is meant by the polar triangle and prove that its sides are equal to the supplements of the angles of the primitive triangle.

2. Prove Napier's first analogy, viz.:

$$\tan\frac{A+B}{2} = \frac{\cos\frac{a-b}{2}}{\cos\frac{a+b}{2}}\cot\frac{C}{2},$$

and from it deduce the third analogy.

3 What are Napier's circular parts, and how are they used in the solution of (1) right-angled triangles and (2) quadrantal triangles.

4. Explain the terms right ascension, declination, parallax, mean sun and equation of time.

5. What will be the equation of time and the sidereal time at 2 h. 30 m. 25s. Montreal mean time this afternoon?

6. The culmination of α Ursae Majoris (Nautical Almanac, *p.* 340) is observed at Montreal on April 14th, 1884, at 9h. 21m. 56.24s. by a mean time chronometer; show that the chronometer was 4.15 sec. slow at the time of observation.

7. Explain two methods for determining latitude.

8. The meridian transit of the bright limb of the moon is observed on April 7th, 1884, at 11h. 20m. 46.45s. by a sidereal chronometer, that of ϵ Leonis at 11h. 24m. 34.20s. Determine the longitude of the place of observation.

THIRD YEAR.

MECHANICS.

SATURDAY, APRIL 19TH:—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M. A.

1. Distinguish between a pound and a poundal, and state their ratio. Which is constant, and why?

2. A right-angled triangular plate, of which the sides are 3, 4 and 5 inches, is suspended by a string fixed at the right angle, what angle will the hypotenuse make with the horizon?

3. A fly-wheel weighing 20 tons turns on an axle 18 inches in diameter; determine the loss of energy by friction in one turn of the wheel, the co-efficient of friction being $\frac{1}{10}$.

4. Determine the loss of energy by friction at the plane extremity of a cylindrical pivot.

5. State and prove one of Guldinus' properties of the centre of gravity.

6. Explain the laws of Boyle and Charles. By what formula may they be combined?

7. A vessel in the form of a triangular pyramid, having each edge one foot in length, is filled with water; find the pressure on each face when one of them is horizontal and the opposite angle is (1) upwards or (2) downwards.

8. Describe the common suction-pump and its mode of action. Explain how the height of the water in the pump may be inferred from a knowledge of the tension of the piston rod.

9. Given the velocity and angle of projection of a projectile, determine the horizontal range, and find for what angle the range is a maximum for a given velocity.

10. A particle suspended by a string 3 feet long is struck horizontally so as to produce in it a velocity of 15 feet per second, find the arc which the particle will have described when the string begins to slacken, and the greatest height to which it will rise.

THIRD YEAR.

MATHEMATICS (Advanced).

TUESDAY, APRIL 22ND :—MORNING, 9 TO 12.

Examiner,..... .....G. H. CHANDLER, M. A.

1. Prove DeMoivre's formula, viz :

$$(\cos x + \sqrt{-1}\sin x)^m = \cos m\,x + \sqrt{-1}\sin m\,x.$$

2. Show that

$$\log_e \sec x = \frac{x^2}{2} + \frac{x^4}{12} + \frac{x^6}{45} + \ldots\ldots$$

3. Find the value of $\frac{\log \sin 2x}{\log \sin x}$, $\frac{\log \sec x}{x^2}$, and of $\frac{(e_x - 1)\tan^2 x}{x^3}$ when $x = 0$; also of $\sec x - \tan x$ when $x = \frac{\pi}{2}$.

4. What is the nature of the multiple point in the following curves

(*a*) $x^3 + y^3 = 3\,a\,x\,y$,

(*b*) $a\,y^2 = x^3$,

(*c*) $y^2 = x^2\,(2\,x + 1)$,

(*d*) $y^2 = x^2\,(2\,x - 1)$.

5. Find the values in the following integrals :

(*a*) $\int \frac{(x^4 - 2)\,dx}{x^3\,(x - 1)}$,

(*b*) $\int \frac{x^4\,dx}{\sqrt{a^2 - x^2}}$,

(*c*) $\int \frac{dx}{\sin x \cos^3 x}$.

6. Integrate the equations

$$\frac{d^2 s}{d\,t^2} + a^2 s = 0,$$

$$dz = \frac{1}{y}\,dx + \left(2\,y - \frac{x}{y^2}\right)dy.$$

7. Given the curve $y^2\,(a^2 - x^2) = x^4$, show

(*a*) that the origin is a point of inflexion,

(*b*) that $x = a$ and $x = -a$ are asymptotes,

(*c*) that its polar equation is $r = a \tan \theta$,

(*d*) that the total area included between the curve and its asymptotes is πa^2,

(*e*) that the distance from the origin to the centre of gravity of the portion of this area on the right of the axis of y is

$$\frac{8}{3}\ \frac{a}{\pi},$$

(*f*) that the moment of inertia of this portion with regard to the axis of y is $m.\ \frac{3}{4}\ a^2$.

8. Find the locus of the centre of a circle which passes through a fixed point and touches a given line.

9. Prove that the triangle formed by a tangent to a hyperbola and the asymptotes is of constant area.

10. Obtain a formula for the angle between two lines in space in terms of their direction cosines.

11. Find the equation of the plane which passes through the points $(3, 2, -2)$, $(0, -2, 4)$, $(-3, 4, 1)$; and the equations and length of the perpendicular on it from its origin.

12. Show that the equation of that tangent plane of an ellipsoid which makes equal angles with the axes is $x + y + z = \sqrt{a^2 + b^2 + c^2}$.

FIRST YEAR.

EUCLID.—ARITHMETIC.

THURSDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiners,..... ..... } ALEXANDER JOHNSON, LL.D.
G. H. CHANDLER, M.A.

(*Write the answers on two separate sets of papers headed A and B respectively to correspond to the questions.*)

A

1. If four right lines be proportional, the rectangle under the extremes is equal to the rectangle under the means.

a. The rectangle under the two sides of any triangle is equal to the rectangle under the diameter of the circumscribing circle and the perpendicular let fall from the vertex on the base.

2. In a right-angled triangle, the perpendicular from the right angle to the base divides the triangle into triangles which are similar to the whole and to each other.

a. The rectangle under the segments of the base is equal to th square on the perpendicular.

3. On a given right line construct a segment of a circle containing an angle equal to a given one.

4. What is the longest straight line that can be drawn in a circle? Prove.

5. Extract the square root of 36, 180, 225.

6. Simplify $\frac{2\frac{2}{3} \text{ of } 5\frac{1}{6}}{13\frac{2}{7}}$.

B

7. If the square described on one of the sides of a triangle be equal to the sum of the squares described on the other two sides, the angle contained by these two sides is a right-angle.

8. Find the ratio of the square described about a circle to the square inscribed in the same circle?

(*a*). Define duplicate ratio and triplicate ratio; what is the duplicate ratio of these two squares?

9. The straight line which bisects the vertical angle of a triangle divides the base into segments which have the same ratio which the other two sides have to one another.

10. Find a mean proportional between two given straight lines?

11. How much per day is £56 15s. 10½d. per year?

12. Find the change in income which would result from selling 36 shares of 6 per cent. stock at 120 and investing the proceeds in 5½ per cents at 108, the par value being $100 in each case.

FIRST YEAR.

TRIGONOMETRY—ALGEBRA.

WEDNESDAY, APRIL 16TH:—MORNING, 9 TO 12.

Examiners,..... { ALEXANDER JOHNSON, LL.D
G. H. CHANDLER, M.A.

(*Write the answers on two separate sets of papers headed A and B respectively to correspond to the questions*).

A

1. The circumference of a circle is divided so that the arc subtending an angle of one second, is $\frac{1}{1\,0}$ th of an inch long; find the radius of the circle, proving any formula you employ.

a. The symbol $\frac{\pi}{2}$ has two different significations in the text-book put on the paper, without words, the two things signified, and then explain the connection.

2. Calculate the cosines, tangents and secants of the angles whose sines are $-\frac{1}{2}$ and 1 respectively.

3. Prove $tan\ (A + B) = \frac{tan\ A + tan\ B}{1 - tan\ A\ tan\ B}$

a. The vertical angle of a triangle is half a right angl e ; find the tan gents of the two parts into which it is divided by the perpendicular on the base, if the segments of the base are in the ratio of 3 to 1.

4. Prove $sin\ A = 2\ sin\ \frac{1}{2}\ A\ cos\ \frac{1}{2}\ A$.

5. Prove the rule for changing signs when a term is transferred from one side of an equation to the other.

6. Solve the equation

$$\sqrt{7x+1} = 3 + \sqrt{2x-1}$$

7. Find the greatest common measure of $x^4 - 6x^3 + 13x^2 - 12x + 4$ and $x^4 - 4x^3 + 8x^2 - 16x + 16$.

B

8. Find the square root of $1 - 6x + 15x^2 - 20x^3 + 15x^4 - 6x^5 + x^6$

9. Reduce the fractions

$$\frac{x(x^3+y^3)(x-y)}{(x^2-y^2)(x^2+y^2-xy)} \text{ and } \frac{x^4+3x^3+x+3}{x^3-8x+3}$$

to their lowest terms.

10. Solve the equations

(*a*) $(m+n)(m-x) = m(n-x)$,

(*b*) $a + x - \sqrt{a^2 - x^2} = b$,

(*c*) $\frac{1}{3} + \frac{1}{x+3} + \frac{1}{3+2x} = 0$,

(*d*) $\frac{x}{a} = \frac{y}{b} = \frac{1}{x+y}$

11. Trace the changes in the sign and magnitude of the tangent of an angle as the angle increases from 0° to 360°. Make two angles of which the tangents are respectively + 2 and —2.

12. Prove that in any triangle

$$\frac{sin\ A}{a} = \frac{sin\ B}{b} = \frac{sin\ C}{c}.$$

$$tan\ \frac{A-B}{2} = \frac{a-b}{a+b}\ tan\ \frac{A+B}{2}.$$

13. Show that $sin\ 18° = \frac{1}{4}(\sqrt{5}-1)$.

INTERMEDIATE EXAMINATIONS.

EUCLID—ARITHMETIC.

WEDNESDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Find a mean proportional between two given lines,

2. Find two straight lines which have the same ratio as the areas of two given regular pentagons.

3. Equal triangles, which have an angle in each equal, have the sides about the equal angles reciprocally proportional.

4. Triangles which have equal altitudes are to one another in the same ratio as their bases.

5. Circumscribe a circle to a given triangle. When will the centre be inside, outside, or on one of the sides, of the triangle.

6. Angles in the same segment of a circle are equal.

7. In an obtuse angled triangle the square on the side subtending the obtuse angle exceeds the sum of the squares of the sides containing it by twice the rectangle under either of them, and the segment contained between the obtuse angle and the foot of the perpendicular let fall from the opposite angle.

8. Extract the square root of 2 correctly to three places of decimals.

9. Find the difference between the amount of $1,200 placed for 2 years at 5 per cent. compound interest; and the present value of the same sum due 2 years hence at 5 per cent. compound interest, interest payable yearly

10. Find the greatest common measure of 2301 and 3717; and the least common multiple of 192, 204 and 272.

11. Divide $3\frac{3}{14} + \frac{7}{8} + 1\frac{19}{24}$ by $1\frac{3}{8} + 5\frac{17}{21} - 7\frac{1}{24}$.

12. If the food of 11 persons for 13 weeks cost $560.66, what will it cost to feed 26 persons for 11 weeks, 5 days.

INTERMEDIATE EXAMINATIONS.

TRIGONOMETRY.—ALGEBRA.

THURSDAY, APRIL 10TH :—MORNING, 9 TO 12.

1. Calculate in degrees, minutes and seconds the greatest angle in a triangle whose sides are 5, 6, 7 feet respectively.

(*a*) Prove the formula you employ.

2. The distances of a given station from two objects situated at opposite sides of a hill are 3384 and 2808 feet, and the angle at the station subtended by their distance is 64° 28′, what is their distance from one another.

3. One angle of a right-angled triangle whose hypotenuse is 100 feet long is 60° ; find the sides.

4. If A be the circular measure of an angle and A'' the number of seconds in it, prove the formula used in works on astronomy

$$A'' = \frac{A}{\sin 1''}$$

5. Prove $\tan A = \dfrac{\sin A}{\cos A}$:

$$\cos A = \frac{1}{\sqrt{1 + \tan^2 A}};$$

$$\text{Sec } A = \tan A \sin A + \cos A.$$

6. Prove $\cos 2A = 1 - 2\sin^2 A$; $\tan 2A = \dfrac{2 \tan A}{1 - \tan^2 A}$.

7. Find the cosine, tangent and secant of the angles whose sines are $\frac{1}{2}$ and 1 respectively.

8. Solve the equations :—

(*a*) $\dfrac{3x - 5}{4} - \dfrac{x + 1}{7} = 2.$

(*b*) $\dfrac{1}{2(x + 3)} = \dfrac{1}{3(x + 2)} + \dfrac{1}{6(x + 1)}.$

(*c*) $\frac{1}{3}(x + y) = \frac{1}{5}(x - y)$; $3x + 11y = 4.$

(*d*) $3x^2 + 1 = \dfrac{28x}{5}.$

9. Simplify $\dfrac{1}{x - 2} + \dfrac{1}{x^2 - 3x + 2} - \dfrac{2}{x^2 - 4x + 3}.$

10. A man can walk a certain distance in 4 hours ; if he were to increase his rate by one-fifteenth, he could walk one mile more in that time. What is his rate ?

11. Resolve into their simplest possible factors :—

$$10x^2 + x - 2 ; 6x^2 + 5xy - 6y^2.$$

12 Find the greatest common measure of

$$1 + x + x^3 - x^5 \text{ and } 1 - x^4 - x^6 + x^7.$$

THIRD YEAR.

MECHANICS, HYDROSTATICS.

TUESDAY, APRIL 1ST:—MORNING, 9 TO 12.

Examiner,..... .....ALEXANDER JOHNSON, LL.D.

1. Explain the manner of representing pressures by right lines, and state the proposition by which the combined effect of two known pressures acting at the same point of a body is determined geometrically.

2. Find the resultant of two parallel forces acting in the same direction.

3. State the law of universal gravitation, and express it algebraically.

a. The mass of the sun being assumed to be 315,000 times the mass of the earth, and his diameter to be 850,000 miles calculate what a man weighing 150 lbs. on the surface of the earth, would weigh if transferred to his surface.

4. The interval between the threads of a screw is 1-6th of an inch and the diameter of the cylinder is 1 inch; a power equal to 139 lbs. acts in a circle whose circumference is 3 feet; find the pressure on the thread of the screw.

5. A ship sails due north, at the rate of 4 miles an hour, and a ball is rolled towards the east, across her deck, at right angles to her motion, at the rate of 10 feet per second; find the real motion of the ball in magnitude nd direction.

6. Apply the principle of "constancy of work done" to find the condition of equilibrium in the wheel and axle.

7. If a circle be drawn in a vertical plane, and from its highest point shords be drawn, the time occupied by a body in running down any chord is constant.

8. If the earth had been originally a sphere in a fluid condition, show that, in consequence of rotation, its shape would be altered, and calculate the force transporting particles towards the equator.

9. Describe an experiment showing the elasticity of air.

10. If a cubical block of oak (*sp. gr* 0.743) containing 64 cubic inches were placed in the water of the Dead Sea (*sp. gr*. 1.24) what would be the height of the part out of the water.

11. Describe the suction pump, giving the mechanical action clearly.

12. Show that the elastic force of the air in the receiver of an air pump after n strokes is

$$H \times \left(\frac{R}{R+P}\right)^n$$

where H is the height of the barometer, R the volum of the receiver and leading tube, and P the volume of the pump.

THIRD YEAR.

OPTICS.—DESCRIPTIVE ASTRONOMY.

WEDNESDAY APRIL 2ND ; MORNING 9 TO 12.

Examiner,..... ..... ALEXANDER JOHNSON, LL. D.

1. Choosing two pairs of convex lenses, with one pair a telescope may be made ; with the other a microscope ; what is the difference in the construction and in the choice of the lenses.

2. A short-sighted person can read a book with ease at the distance of $5\frac{1}{2}$ inches : he wishes to hold the book at the distance of 10 inches from his eyes, what kind of spectacles must be used, and of what focal length.

3. A ray of light falls nearly perpendicularly on a thin prism ; prove that the deviation in passing through is $\delta=(\mu-1)\varepsilon$

Where is this proposition used

a. In the case of a prism not thin but having an angle of 60° calculate with the aid of the mathematical tables, the deviation for a ray falling on it at an angle of 40°, the index of refraction being 3-2.

4. The flame of a candle 2 inches in heigth is placed in front of a concave mirror of 3 feet radius at a distance of 10 feet ; find the position and magnitude of inverted image.

5. Find the principal focus of a plano-concave lens of glass, the radius of the concavity being *r*.

6. Define dispersive power. Find the dispersion produced by a convex lens of crown glass (dispersive power=.036) of 1 inch aperture and 3 ft. focal length.

7. Name any three constellations with which you are familiar, and describe their positions in the heavens, at some definite hour on a night of the past week.

8. State the direction of the motion of the moon among the stars from night to night. What interval elapses from the time she has passed any one star until she again approaches it. What is the difference between this and a lunar month.

9. Describe the phases of the moon and account for them

10. Account for an eclipse of the sun. Describe some of the phenomena then visible, and account for them, explaining the connection of spectrum analysis with the subject.

11. What is the probable nature of the rings of Saturn.

12. Account for the November showers of meteors.

B. A. ORDINARY EXAMINATION.

MECHANICS.—HYDROSTATICS.

TUESDAY, APRIL 8TH.—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. If the length of a seconds pendulum at Montreal be 39.118 inches, and the length (L) at any other latitude l be given by the formula

$$L = 39.118 - \frac{1}{10} \cos 2l,$$

find the weight at Montreal of a body which would weigh 10 lbs less at the Equator.

2. A body descends in a vertical plane along any curve whatever, show that its velocity at any point depends not on the curve but on the vertical distance through which it has descended.

3. A body revolves uniformly in a vertical circle whose radius is 2 feet, find how many revolutions it should make in a minute in order that the centrifugal force should be exactly equal to the weight.

4. Find the time of running down an inclined plane (inclination = 14°) 1000 feet long at London ($g = 32.1908$).

5. Find the horse-power of a steam-engine capable of raising 750 tons of coal per day of 12 hours, from a pit 100 fathoms deep.

6. Describe Smeaton's Pulley and find the ratio of the Power to the Resistance.

7. A Roman steelyard is formed out of a uniform bar 5 feet long, the fulcrum being placed 5 inches from one end; if the moveable weight be 2 lbs, find the greatest weight that can be determined by the instrument.

8. Find the centre of gravity of a thin triangular plate of uniform thickness.

9. The diameter of a safety-valve is $2\frac{1}{2}$ inches, the distance from the centre of the valve to the fulcrum of the lever is 3 inches, a weight of 28 lbs is placed at a distance of 9 inches from the valve; find the *effective pressure*, per sq. inch.

10. Find the height of a mountain from the following observations:—
Height of barometer at sea-level 30.045; temp. 77.5° Fah.
" " upper station 23.660; " 70.5° "

11. Explain the method of finding the specific gravity of liquids by the hydrometer.

12. Show that the velocity of the motion of the liquid in a siphon diminishes as the transference of the liquid proceeds.

B.A. ORDINARY EXAMINATIONS, 1884.

ASTRONOMY—OPTICS.

WEDNESDAY, APRIL 9TH :—MORNING, 9 TO 12.

Examiner,.....ADEXANDER JOHNSON, LL.D.

1. There will be a total eclipse of the Moon to-morrow morning, partly visible at Montreal, of which the following particulars are given: — (Standard time.)

			^{h} ^{m}	
First contact	with the	Penumbra	3 42	A.M.
"	"	Shadow	4 52	"
Totality		begins	6 00	
"	"	ends	7 33	

The Moon sets eclipsed.

(*a*.) Explain these statements clearly, and account for the facts with the aid of diagrams.

(*b*.) State generally in what parts of the world the eclipse will be wholly visible, where wholly invisible.

(*c*.) Show whether or not the eclipse begins at the same moment of absolute time wherever it is visible. Does it differ or not in this respect from a solar eclipse.

(*d*) Full moon is at 6^h 44^m A.M. What is the connection between this and the eclipse?

What with the time of Easter?

2. Explain fully how you would calculate the duration of totality, being given the semi-diameters and the horizontal parallaxes of the Sun and Moon, and an equation connecting the time with the distance of the centres of the Moon and shadow.

3. A traveller exploring an unknown country wishes to determine the positions of places on a map. What instruments and books would he want? What observations would he make? Why?

4. How has the diameter of the Earth been ascertained?

5. Explain the method of finding the distance of Venus from the Sun by observing her greatest and her least apparent diameter.

6. Define Parallax. What is the object of the correction?

7. Define declination, right ascension, latitude and longitude (celestial sphere), altitude, azimuth.

8. Choosing two pairs of convex lenses you can make with one a telescope, with the other a microscope; on what principles would you choose them? What difference would there be in the construction?

9. Newton thought it was not possible to make an achromatic telescope. Explain fully what led him into this error.

10. Find the angle of total reflection of water (index of refraction $= \frac{4}{3}$.)

11. Find the dispersive power of crown glass, its refractive index being 1·55, and those of the extreme red and violet rays being $\frac{77}{50}$ and $\frac{78}{50}$.

12. Find the magnifying power of a pocket lens of $\frac{1}{10}$ inch focus for a person whose distance of distinct vision is 15 inches.

B. A. AND THIRD YEAR.

LIGHT AND HEAT.

THURSDAY, APRIL 3RD :—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL. D.

1. Describe any experiment illustrating the refraction of light, and state the laws of refraction.

2. With a convex lens it is desired to form the largest possible image of a candle on a screen in a dark room ; state how this is to be done, giving your reasons.

3. How is it shown that bodies have no colours of their own, but that the colour depends on the incident light.

4. How are the dark lines in the solar spectrum accounted for ? Describe experiment illustrating the theory.

5. Account for ordinary refraction on the wave theory of light, showing the connection between the index of refraction and the velocities in the two media.

6. Give the physical theory of double refraction.

7 Define plane polarized light. In an experiment with the polarizing apparatus when the analyser had been turned so that the screen was dark a thin plate of mica was placed between the polarizer and analyser, and light appeared then on the screen ; account for this.

8. What are the tests of a good mercurial thermometer.

9. Describe the mode of measuring heights by the boiling point.

10. A bar of wrought iron, whose section is a square having its side 2 inches long, has its ends fixed between two immoveable blocks when the temperature is 20° Fah.; what pressure will it exert against them if the temperature becomes 96° Fah., the modulus of elasticity being 29,000,000 lbs., and the coeff. of expansion for 1° Fah., ·00000642. Prove the general formula $T = E\,a\,t$, where T is the pressure, E the modulus, a the coeff., and t the number of degrees by which the temperature is raised.

11. Define latent heat. Calculate what weight of steam will raise the water of a bath containing 24 cubic feet at 12° C. to 35° C.

12. Give Joule's mechanical equivalent of heat, explaining the meaning of the term.

a. If a ball of lead weighing 600 grains, moving with a velocity of 1100 feet a second, strike a target, calculate the amount of heat disengaged by the collision.

13. Define unit of heat, and specific heat. Describe an experiment illustrating the latter.

a A piece of iron weighing 60 ounces, and at a temperature of 100° C., is immersed in 180 ounces of water, whose temperature is 19° C.; after a time the common temperature becomes 22° C. Find the specific heat of iron.

HONOUR EXAMINATIONS.

FIRST YEAR.

GEOMETRY.

THURSDAY, APRIL 24TH:—9 TO 1 A.M.

Examiner,.....REV. PRINCIPAL LOBLEY, D.C.L.

1. Prove that half the base of a triangle is greater, equal, or less than the bisector of the base, according as the vertical angle is greater, equal or less than a right angle.

2. Divide a given straight line internally into segments, such that the rectangle under the segments shall be equal to a given square.

3. Prove that the sum of the radii of the escribed circles of a triangle is equal to the radius of the inscribed circle together with four times the radius of the circumscribed circle.

4. Draw a common tangent to two given circles.

5. If any two chords be drawn through the middle point of a given chord of a circle, the straight lines joining their extremities which are on opposite sides of the given chord will cut off equal parts from its ends.

6. A B is a common chord of two circles. Draw a straight line A C D meeting the two circles in C & D, so that AC.AD shall be equal to a given rectangle.

7. Define Pencil, Harmonic Pencil, Ray, Range, Transversal. If a transversal cuts the sides of a triangle the segments of any side are in a ratio compounded of the ratios of the segments of the other sides.

8. Two vertices of a triangle move on fixed straight lines, and the three sides pass through three fixed points which lie in a straight line; find the locus of the third vertex.

9. If any hexagon be inscribed in a circle, the intersections of the three pairs of opposite sides lie on the same straight line.

10. Define the radical axis of a pair of circles.

Describe a circle such that the radical axis of it and each of three given circles shall pass respectively through three given points.

11. Describe a circle passing through a given point and touching two given circles.

12. If through any point inside or outside a given circle secants be drawn, the straight lines joining the extremities of the chords intersect on the polar of that point.

FIRST YEAR.

ALGEBRA AND THEORY OF EQUATIONS.

FRIDAY, APRIL 25TH :—9 TO 1 A.M.

Examiner,.....REV. PRINCIPAL LOBLEY, D.C.L.

1. Prove that the geometrical mean of any two quantities is the geometrical mean of their arithmetical and harmonical means.

2. Prove that if r be the radix of the scale of notation, any number is divisible by $r-1$ the sum of whose digits is divisible by $r-1$.

3. Prove that the number of combinations of n things r together is

$$\frac{\lfloor n}{\lfloor r \quad \lfloor n-r}$$

If the number of combinations of n things $r-1$ together is the same as the number $r+1$ together, find n.

4. Shew how to find the greatest term in the expansion of $(x+a)^n$.
Find the greatest term in $(1+x)^n$, where $x = \frac{3}{5}$ and $n = 4$.

5. In how many years will a sum of money treble itself at $3\frac{1}{2}$ per cent., compound interest.

$log\ 1035 = 3{\cdot}01494 \qquad log\ 3 = {\cdot}47712.$

6. Prove that $a^x = 1 + log_e\ a\ .x + \frac{(log_e\ a\ .x)^2}{\lfloor 2} + \frac{(log_e\ a\ .x)^3}{\lfloor 3} + \ldots$

where $e = 2 + \frac{1}{\lfloor 2} + \frac{1}{\lfloor 3} + \frac{1}{\lfloor 4} +$ etc. to infinity.

7. Shew that every equation has as many roots, and only as many, as the number which expresses its degree.

8. If the roots of the equation $x^3 + p\,x^2 + q\,x + r = 0$ be $a\ b\ c$ form the equation whose roots are

$$\frac{a}{b+c},\ \frac{b}{c+a},\ \frac{c}{a+b}$$

9. The equation $x^4 - 4\,x^3 - 6\,x^2 + 36\,x - 27 = 0$ has equal roots. Solve it.

10. Find all the commensurable roots of the equation

$$x^4 - x^3 - 13\,x^2 + 16\,x - 48 = 0.$$

11. Explain Cardan's mode of solving a cubic equation. Solve

$$x^3 - 9\,x - 28 = 0$$

12. Shew by Newton's method of approximation that a root of the equation $x^3 - 2\,x - 5 = 0$ is 2.09455148 nearly

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SECOND YEAR.

I.

ANALYTIC GEOMETRY. (*First Paper.*)

THURSDAY, APRIL 24TH:—MORNING, 9 TO 1.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Find the condition that two conic sections given by the general equations should be similar, even though not similarly placed.

2 Given base and sum of sides of a triangle, show that the locus of the centre of the inscribed circle is an ellipse, whose vertices are the extremities of the given base.

3. Show that the points on the ellipse

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

the normals at which will pass through a given external point x', y' are the points of the intersection of the ellipse with the hyperbola.

$$(a^2 - b^2)\, xy = a^2\, x'\, y - b^2\, y'\, x$$

4. Show that the equation of the above ellipse when transformed to oblique axes may be reduced to the form

$$\frac{x^2}{a'^2} + \frac{y^2}{b'^2} = 1$$

and prove that each of the new axes bisects all chords parallel to the other.

5. Form the equation of the conic making intercepts a, b, a', b', on the axes.

6. Define *centre*, and show that conic sections have, in general, one and only one centre; find its co-ordinates.

7. If through any point O, on the circumference of a circle, any three chords be drawn, and on each as diameter, a circle be described, these three circles will intersect in three other points besides O, which lie in one right line.

8. If the equation of any right line contain an indeterminate θ in the form

$$(x - a)\cos\theta + (y - \beta)\sin\theta = r$$

the line will touch the circle

$$(x - a)^2 + (y - b)^2 = r^2.$$

9. Given any number of points, find locus of a point such that m' times the square of its distance from the first m'' times the square of its distance from the second + &c. = a constant.

10. Find the equation of the polar of a given point with regard to a conic section given by the general equation.

11. If a line be such that the sum of the perpendicular let fall on it from a number of fixed points, each multiplied by a constant, be zero, it will pass through a fixed point.

12. The focal chord of curvature of any conic is equal to the focal chord of the conic parallel to the tangent at the point.

SECOND YEAR.

II.

ANALYTIC GEOMETRY. (*Second Paper.*)

THURSDAY, APRIL 24TH:—AFTERNOON, 2 TO 5.

Examiner,..... .....ALEXANDER JOHNSON, LL.D.

1. Find the polar equation of the ellipse, the focus being the pole.

2. Prove that in the parabola the subnormal is constant, and equal to the semi-parameter.

3. The rectangle under the focal perpendiculars on the tangent is constant, and equal to the square of the semi-axis minor.

4. The triangle formed by joining the extremities of the conjugate diameters of an hyperbola has a constant area.

5. The difference of the squares of any pair of conjugate diameters of an hyperbola is constant.

6. Taking the general equation of a curve of the second degree, prove that there can be drawn through the origin two real, coincident or imaginary lines which will meet the curve at an infinite distance.

7. If through a fixed point O any chord of a circle be drawn cutting the circle in the points P and P', and $O\ Q$ be taken an arithmetic mean between the segments OP, OP'; find the locus of Q.

8. Given any two points A and B, and their polars, with respect to a circle whose centre is O; let fall a perpendicular AP from A on the polar of B, and a perpendicular BQ from B on the polar of A; then

$$\frac{OA}{AP} \quad \frac{OB}{BQ}.$$

9. Find the conditions that the general equation of the second degree should represent a circle, and when they are fulfilled determine the centre and radius.

10. Given a point and two fixed lines; draw any line through the fixed point, and join transversely the points where they meet the fixed lines; find the locus of the intersection of the transverse lines.

11. Find the polar equation of a right line.

12. Find the diagonals of the parallelogram, formed by

$$x = a, \quad x = a', \quad y = b, \quad y = b'.$$

13. Transform the equation

$$x^2 + y^2 - 4x - 6y = 18$$

to parallel axes, the new origin being the point (2, 3).

SECOND YEAR.

III.

CALCULUS.

FRIDAY, APRIL 25TH:—MORNING 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Show that the whole area of an ellipse represented by the general equation

$$ax^2 + 2hxy + by^2 + gx + 2fy + c = 0$$

is represented by

$$\pi \frac{(af^2 + bg^2 + ch^2 - 2fgh - abc)}{(ab - h^2)^{\frac{3}{2}}}$$

2. Find the area of a segment of a parabola cut off by a chord perpendicular to the axis.

3. Find the formula of reduction for

$$\int \sin^m \theta \cos^n \theta \, d\theta$$

4. Find the integrals

$$\int \tan^4 \theta \, d\theta,$$

5. Find the integrals

$$\int \frac{(A + Bx^2)\,dx}{x(a + bx^2)}; \quad \int \frac{dx}{1 + x^5}; \quad \int \frac{dx}{x^4 - 1}$$

6. Find the values of

$$\int_0^{\pi} \sin mx \sin nx \, dx; \quad \int_0^{\frac{\pi}{2}} \cos^5 x \, dx$$

7. Find the integrals of

$$\int \frac{x^3\,dx}{(a + cx^2)^{\frac{5}{2}}}; \quad \int e^{ax} \sin mx \, dx; \quad \int \sin^{-1} x \, dx$$

8. Find the integrals

$$\int \frac{d\theta}{a + b\cos\theta}; \quad \int \frac{dx}{(a + cx^2)^{\frac{3}{2}}}; \quad \int \frac{dx}{\sqrt{1 + x + x^2}}.$$

9. Find the integrals of

$$\int \frac{(p + qx)\,dx}{a + 2bx + cx^2}; \quad \int \frac{dx}{x \log x}.$$

10. Find the conditions that a function of a single variable should have a maximum or minimum value, and apply them to the function

$$u = x - \sin x.$$

11. Investigate a method for determining the true value of the fraction $\frac{f(x)}{\phi(x)}$ which becomes of the form $\frac{0}{0}$ when $x = u$

a. Find the value of $\frac{1 - \sin x + \cos x}{\sin x + \cos x - 1}$, when $x = \frac{\pi}{2}$

12. Prove that

$$\tan^{-1}(x + h) = \tan^{-1} x + h \operatorname{stn} z \frac{\sin z}{1}$$

$$- (h \sin z)^2 \frac{\sin 2z}{2} + \&c.$$

when $z = \tan^{-1}\left(\frac{1}{x}\right)$

13. Expand $\log(1 + y)$ by Taylor's Theorem.

14. If $y = x^4 (\log x)^{\frac{3}{2}}$ find $\frac{d^5 y}{dx^5}$

15. Differentiate $y = \frac{1 - x}{\sqrt{1 + x^2}}$; $y = \sin^{-1} \frac{x}{\sqrt{1 + x^2}}$

16. Define the differential coefficient, and find the differential coefficient of $\cos x$, $\sin^1 x$, $\sin(1 + x^2)$.

SECOND YEAR.

IV

PLANE AND SPHERICAL TRIGONOMETRY.

FRIDAY, APRIL 25TH:—AFTERNOON, 2 TO 5.

Examiner,.....ALEXANDER JOHNSON, LL. D.

1. Find the numbers of different values, comprised in the functions

$$\cos \frac{2m\pi + \theta}{n} \text{ and } \sin \frac{2m\pi + \theta}{n}$$

when successive integral values are assigned to m.

2. Prove that

$$\cos m\theta = \cos^m \theta - \frac{m(m-1)}{1.2} \cos^{m-2} \theta \sin^2 \theta + \&c.$$

showing how far the series will be continued according as m is odd or even.

3. Prove $\cos a = \frac{1}{2}\left\{ e^{a\sqrt{-1}} + e^{-a\sqrt{-1}} \right\}$

4. If $\alpha + \beta + \gamma = 180°$ prove

$$\sin(\alpha + \beta)\sin(\beta + \gamma) = \sin\alpha \sin\gamma.$$

5. Find the sum of n terms of the series

$$\cos a + \cos(a + \delta) + \cos(a + 2\delta) + \&c.$$

6. Every section of a sphere made by a plane is a circle.

7. In a spherical triangle from

$$\sin\tfrac{1}{2}A = \sqrt{\frac{\sin(s-b)\sin(s-c)}{\sin b \quad \sin c}}$$

8. Prove the expression for the spherical excess

$$\cot\tfrac{1}{2}\Sigma = \frac{1 + \cos a + \cos b + \cos c}{2\sqrt{\sin s \sin(s-a)\sin(s-b)\sin(s-c)}}$$

9. The hypotenuse of a spherical triangle is 75° 20′, and one side is = 64° 10′; find the other side.

10. The angles of a spherical triangle are 114° 30′, 83° 12′ and 123° 20′; find the greatest side.

THIRD YEAR.

I.

ASTRONOMY—OPTICS.

MONDAY, APRIL 21ST:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Show that the effect of the moon in producing tides is about $2\frac{1}{5}$ times as great as the sun's, assuming that the ratios of masses of the sun and earth to that of the moon are 322000 and 80 respectively, and the ratios of the distances of the sun and moon from the earth to the radius of the earth are 23000 and 60.

2. Investigate the position of Venus when she appears brightest.

3. In an eclipse of the moon, given the latitude of the moon at opposition, the moon's horary motions in longitude and latitude, and the sun's horary motion in longitude, find an equation determining the distance of the centres of the moon and shadow at a time t after opposition.

4. Can a star be found whose real position is unaffected by parallax refraction and aberration.

5. What is the present longitude of a star which was the polar star in A.D. 84.

6. Prove that the effect of aberration will be to make the stars when referred to the celestial sphere describe small ellipses about their true places.

7. Regarding the earth as an oblate spheroid show that the radius for a place whose geographical latitude is ϕ is given by the equation

$$r^2 = \frac{a^4 \cos^2\phi + b^4 \sin^2\phi}{a^2 \cos^2\phi + b^2 \sin^2\phi}$$

8. At a place in lat. 41° 25′ nearly, the latitude of Regulus (Dec. 12° 41′ 18″ N.) was found by observation to be 41° 5′ 20″, when its hour angle was 3h. 2m. 21s., find the latitude of the place.

9. A pencil of compound rays is refracted directly through a thin lens; find the chromatic aberration.

10. How may the refracting angle of a prism be measured?

11. Find the distance between two lenses in order that an excentrical pencil incident parallel to the axis may suffer an equal amount of deviation at each lens.

12. When a pencil is refracted through a prism in a principal plane, show that the deviation is a minimum when the angle of incidence is equal to the angle of emergence.

THIRD YEAR.

II.

MECHANICS. (*Statics*).

FRIDAY, APRIL 25TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. A flexible and inextensible string is suspended from two fixed points; if the area of the normal section of the string at any point is made proportional to the tension at that point, show that the equation of the curve will be of the form $y = a \log \text{sec.} \frac{x}{a}$.

2. Find the centre of gravity of a hemisphere in which the density is proportional to the n^{th} power of the distance from the centre.

3. Find the centre of gravity of a circular arc of uniform thickness and density.

4. A triangular system of bars, freely jointed at their extremities, is kept in equilibrium by three forces acting on the joints, determine the stress in hach bar.

5. Two equal smooth spheres are placed inside a hollow vertical cylinder open at both ends, which rests on a horizontal plane; find the least weight of the cylinder in order that it may not be upset.

6. A uniform heavy beam (length $= 2a$) rests with one extremity against the internal surface of a smooth fixed hemispherical bowl (radius $= r$), it is supported at some point in its own length by the rim of the bowl, if θ be the inclination of the beam to the horizon, prove

$$4r\cos^2\theta - a\cos\theta - 2r = 0.$$

7. Prove that the work done in dragging a heavy body up a rough inclined plane, without acceleration, by a force parallel to the plane is equal to the work done in dragging the body along the base of the plane (supposed equally rough) together with the work done in lifting it vertically through the height of the plane.

8. Use the equation of virtual work to draw a normal at any point of an ellipse.

9 Given the base of a triangle and sum of the cosines of the base angles; show that if a particle be placed anywhere on the curve which is the locus of the vertex, and be acted on by two forces along the sides, varying inversely as the squares of the distances from the ends of the base, one attractive, and the other repulsive, the resultant is directed along the tangent.

10. One end of a light string is attached to a fixed point: the string after passing over a smooth peg sustains a given weight at its other extremity, and to a given point in the string is attached a given weight; find the position of equilibrium of the system.

11. Two forces are represented by two semi-conjugate diameters of an ellipse; prove that their resultant is a maximum when diameters are equal.

12. If two forces acting at a point O are represented in magnitude and direction by OB and $n\,OA$, their resultant is represented in magnitude, and direction by $(n+1)\,OG$, the point G being taken on AB, so that $BG = n\,AG$.

THIRD YEAR.

III.

MECHANICS (*Dynamics and Hydrostatics*).

FRIDAY, APRIL 25TH:—AFTERNOON, 2 TO 5.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Show that the time of descending from rest at any point of an inverted cycloid to the vertex is independent of the height of the point at starting.

2. A particle describes an ellipse under the action of a force always directed to the centre; show that the force varies directly as the distance.

3. If the radius vector of a particle moving in a plane describe equal areas in equal times about a point in that plane, the resultant force on the particle tends to that point.

4. Prove the expression for the velocity of a particle travelling in a central orbit

$$v^2 = h^2 \left\{ u^2 + \left(\frac{du}{d\theta} \right)^2 \right\}$$

and show that

$$\frac{d^2u}{d\theta^2} + u = \frac{1}{p^3 u^2} \frac{dp}{dr}$$

5. A heavy particle is projected *in vacuo* with a given velocity and at a given inclination to the horizon; find the envelope of all the trajectories corresponding to the different inclinations.

6. A body is projected vertically upwards with a velocity which will carry it to a height $2g$ feet; show that after three seconds it will be descending with a velocity g.

7. When a point moves in a plane curve show that the accelerations along and perpendicular to the radius vector are

$$\frac{d^2r}{dt^2} - r \left(\frac{d\theta}{dt} \right)^2$$

and

$$2 \frac{dr}{dt} \frac{d\theta}{dt} + r \frac{d\theta^2}{dt^2}$$

8. A hollow cube is very nearly filled with fluid, and rotates uniformly about a diagonal which is vertical; find the pressures upon its several aces.

9. A closed vessel is completely filled with homogenous liquid, which is made to rotate uniformly about an axis inclined to the vertical. Find the surfaces of equal pressure.

10. If a mass of fluid be in equilibrium under theaction of given forces prove

$$dp = \rho (X\,dx + Y\,dy + Z\,dz).$$

11. A semi circular area is just immersed in a fluid, its diameter being horizontal ; the density of the fluid varies as the depth. Find the centre of pressure.

12. Show that the pressures on the upper and lower portions of a hemispherical vessel full of fluid, the axis of the vessel being vertical, and the two portions being separated by a horizontal plane bisecting the axis, are the nartiio of 1 : 3.

B. A. HONOURS IN MATHEMATICS AND NATURAL PHILOSOPHY.

I.

PLANETARY THEORY.—NEWTON'S PRINCIPIA.

TUESDAY, APRIL 1ST.—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Knowing the position of a planet and its orbit at a given time, state the leading steps by which its right ascension and declination at a future time are ascertained, taking into account the perturbations produced by the action of other planets.

2. Find an expression for the component in any direction of the force which disturbs the motion of a given planet relatively to the Sun.

3. Investigate the formula

$$\frac{de}{dt} = \frac{na(1-e^2)}{\mu e}\,\frac{dR}{d\varepsilon} - \frac{na\sqrt{1-e^2}}{\mu e}\left(\frac{dR}{d\varepsilon} + \frac{dR}{d\bar{\omega}}\right)$$

4. Show that $\{(a^2 + a'^2 - 2aa'\cos\phi)\}^{-s}$ may be expanded in a series of cosines of multiples of ϕ, and state how this theorem is used in the expansion of R.

5. Integrate the equations for the inclination and longitude of the node, being given

$$\frac{di}{dt} = \frac{m' n a^2 a'}{4\mu} D_1 \tan i' \sin(\Omega - \Omega')$$

$$\tan i \frac{d\Omega}{dt} = -\frac{m' n a^2 a'}{4\mu} D_1 \{\tan i - \tan i' \cos(\Omega - \Omega'\}$$

6. When the line of nodes oscillates find the extent and periods of its oscillations.

7. Show that the variations of the elements of the orbit produced by the periodical terms of R are periodical in form.

8. The periods of Venus and the Earth are 224.7 and 365.256 days respectively. Find approximately the period of the long inequality arising from their mutual perturbations, the important term in the disturbing function R being of the form $P\, e^3\, e'^2\, cos\, \{13\,(nt+\varepsilon) - 8\,(n'\,t+\varepsilon') - 3\,\tilde{\omega} - 2\,\tilde{\omega}'\}$

9. Show in Newton's Manner that the effect of the Sun's disturbing orce is to increase the periodic time of the Moon.

10. Explain the effect of the Sun's disturbing force on the position of the line of nodes of the Moon's orbit.

11. Two bodies attracting each other describe similar figures about their centre of gravity, and about each other.

12. If the orbit in which a body moves revolves round the centre of force with an angular velocity which always bears a fixed ratio to that of the body, prove that the body may be made to move in the revolving orbit in the same manner as in the orbit at rest by the action of a force tending to the same centre.

13. A body describes a parabola round a centre of force in the focus; find the law of force.

II.

THEORY OF THE POTENTIAL—ELECTRICITY.

MONDAY, APRIL 7TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Define potential; and show that at each point in space the resultant attraction of a mass on a particle is normal to the equipotential surface passing through the point.

2. Define tube of force, and show that at all points in empty space on a given line of force the resultant attraction on an imagined unit of mass is inversely proportional to the normal sections of the tube of force at these points.

3. Find by the method of potentials the attraction of a uniform bar on a particle.

4. If all the attracting mass lies on or within an equipotential surface on which the potential is zero, then in all space outside this surface the potential is constantly zero.

5. Whatever be the law of attraction, prove that the attraction of the smaller of two concentric spheres at a point situated on the surface of the larger is to the attraction of the larger at a point situated on the surface of the smaller as the square of the radius of the smaller to the square of the radius of the larger.

6. State fully and accurately all the steps of the investigation of the attraction of an ellipsoid on an external point.

7. Find the surface density of electricity at any point of an ellipsoidal conductor.

8. Define capacity. Find the capacity of a thin plate freely electrified on both sides.

9. Two masses, one attractive, the other repulsive, are concentrated at two points; show that matter may be so distributed over the sphere which is their zero potential surface as to produce the effect of one of these on all external points, and of the other on all internal points; and that its density will vary inversely as the cube of the distance from one of the points.

10. Calculate the surface tension of an electrified soap-bubble.

11. Describe Sir W. Thomson's absolute electrometer, and prove that the attraction F between the plates is

$$F = \frac{(V - V_1)^2 S}{8 \pi d^2}$$

d being the distance between the plates.

12. If V and V_1 be the potentials in absolute measure of the extremities of a galvanic circuit, R the interposed resistance, prove that the "mechanical equivalent" of the heat developed in one second is

$$\frac{(V - V_1)^2}{R}$$

III.

MECHANICS.—(*First Paper.*)

WEDNESDAY, APRIL 16TH:—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. Prove Clausius' Theorem that the mean semi vis-viva of a system of material points in "stationary motion" is equal to its "virial."

2. Define a conservative system of forces, and prove that this will exist first, when the external forces tend to fixed centres at finite distances, and are functions of the distances from these centres; and, secondly, when the forces due to the mutual attractions or repulsions of the particles of the system are functions of the distances between the attracting or repelling particles.

3. A spherical envelope of radius a contains gas at pressure P; assuming that the pressure of the gas per unit of area is inversely proportional to the volume occupied by it, prove that the work required to compress the envelope into a sphere of radius b is

$$4\pi a^3 \log \frac{a}{b}.$$

4. Investigate the change in the vis-viva of a moving system produced by any collisions between the bodies or by any explosions.

5. Prove that any displacement of a body can be represented by a rotation about some straight line, and a translation parallel to that straight line.

6. Investigate the general equations of motion of a body about a fixed point.

$$A\frac{d\omega_1}{dt} - (B-C)\omega_2\omega_3 = L$$

$$B\frac{d\omega_2}{dt} - (C-A)\omega_3\omega_1 = M$$

$$C\frac{d\omega^3}{dt} - (A-B)\omega_1\omega_2 = N$$

7. A body is moving about a fixed point, prove the following equations connecting its motion in space with the angular velocities about the three moving axes:

$$\frac{d\theta}{dt} = \omega_1 \sin\phi + \omega_2 \cos\phi$$

$$\sin\theta \frac{d\psi}{dt} = -\omega_1 \cos\phi + \omega_2 \sin\phi.$$

8. A homogeneous sphere rolls directly down a perfectly rough inclined plane under the action of gravity; find the motion.

9. A body moves about a fixed axis under the action of any forces, find the pressures on the axis, when the body and forces are symmetrical about the plane through the centre of gravity perpendicular to the axis.

10. Prove that the moment of inertia of a heterogeneous ellipsoid about the major axis, the strata of uniform density being similar concentric ellipsoids, and the density along the major axis varying as the distance from the centre is $M\frac{2}{5}(b^2+c^2)$.

11. Prove that the potential of a body of any form at any external distant point is.

tant point is $V = \frac{M}{\rho} + \frac{A+B+C-3I}{2\rho^3}$.

12. A rod rests with one extremity on a smooth horizontal plane, and the other on a smooth vertical wall at an inclination a to the horizon. If it then slips down, prove that it will leave the wall when its inclination is

$$\sin^{-1}(\tfrac{2}{3}\sin a).$$

IV.

MECHANICS.—(*Second Paper.*)

WEDNESDAY, APRIL 16TH:—AFTERNOON, 2 TO 5.

Examiner,.....ALEXANDER JOHNSON, LL.D

1. In the motion of a fluid if the forces be such that

$$X\,dx + Y\,dy + Z\,dz.$$

is the complete differential dR, and if the motion be such that

$$u\,dx + v\,dy + w\,dz$$

is a complete differential $d\phi$, prove that

$$\frac{dp}{\rho} = d\,R - d.\ \frac{d\phi}{dt} - \tfrac{1}{2}\,d\,(V^2)$$

where $V^2 = u^2 + v^2 + w^2$.

2. If P be the external pressure on the free surface of an incompressible fluid in motion; prove that at all points of the free surface

$$\frac{dp}{dt} + u\,\frac{dp}{dx} + v\,\frac{dp}{dy} + w\,\frac{dp}{dz} = \frac{dP}{dt}.$$

3. A vessel in the form of a surface of revolution has a finite horizontal aperture in its base, and is kept constantly full of fluid, find the rate at which fluid must be poured in, on the hypothesis of "parallel sections," exp ing this term.

4. Investigate the equations of motion of gas in a tube, the section of whi does not change rapidly in size, and examine a particular case whe the motion is steady.

5. Find the velocity with which a disturbance is propagated along a tub filled with air, a portion of which has been disturbed in such a way that ll the particles in any section, perpendicular to the axis, are under the same initial circumstances of displacement.

6. Determine the musical notes which can be produced from a tube open at one end.

7. A homogeneous fluid mass, the particles of which attract each other with a force varying directly as the distance, rotates uniformly about an axis through its centre of gravity; investigate the form of the free surface.

8. A heavy elastic string is laid upon a smooth double inclined plane in such a manner as to remain at rest; find how much the string is stre

9. A uniform chain of length l hangs over two fixed points which are in a horizontal line; from its middle point is suspended by one end another chain of equal thickness and length l', supposing each of the two tangents

of the former chain at its middle point to make an angle θ with the vertical, find the distance between the two fixed points, and show that θ can never exceed a certain value.

10. Two given points of a body rest each in contact with two smooth inclined planes; show that the equilibrium of the body is unstable.

11. Define "hodograph." Compare by means of the hodographs the amounts of light and heat received throughout their orbits by the earth moving in a circle and a comet moving in a parabola at the same perihelion distance.

12. Find the condition to which the applied forces must be subject when the vis viva of a particle depends on its position only.

V.

SURFACES.

MONDAY, APRIL 21ST :—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. Prove that for any surface the curve which is the locus of points of intersection of consecutive normals along a line of curvature is a geodesic on the sheet of the surface of centres on which it lies.

2. Find the differential equation of surfaces generated by lines parallel to the fixed plane $ax + by + cz = 0$, viz.:

$$(b + cq)^2 r - 2(a + cp)(b + cq)s + (a + cp)^2 t = 0$$

3. Show that the equation of the surface generated by the revolution of a circle $y = 0$, $(x - a)^2 + z^2 = r^2$, round the axis of z is

$$(x^2 + y^2 + z^2 + a^2 - r^2)^2 = 4a^2(x^2 + y^2)$$

4. Show that the equation of the cylinder, the direction-cosines of whose edges are l, m, n, and which envelopes the quadric

$$Ax^2 + By^2 + Cz^2 = 1 \text{ is}$$

$$(Al^2 + Bm^2 + Cn^2)(Ax^2 + By^2 + Cz^2 - 1) = (Alx + Bmy + Cnz)^2$$

5. Find the equation of the osculating plane to a curve.

6. Every curve has an infinity of evolutes lying on the polar developable.

7. Investigate a formula for the radius curvature at any point of the section of a surface $U = 0$ made by a plane parallel to a given plane.

8. Through a double point on a surface can be drawn an infinity of lines which will meet the surface in three co-incident points, and these will all lie on a cone of the second degree.

9. Two confocal surfaces cut every where at right angles.

10. All quadrics which pass through eight given points have besides a common curve of intersection.

11. Find the surface generated by a right line turning round a fixed axis which it does not intersect.

12. The sum of the squares of a system of three conjugate semi-diameters of an ellipsoid is constant.

13. Find the equation of the plane through a given line perpendicular to given plane.

VI.

CALCULUS.

THURSDAY, APRIL 24TH :—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Find by the symbolical method the solution of the differentia. equation,

$$\frac{d^4y}{dx^4} + 4\frac{d^3y}{dx^3} + 3\frac{d^2y}{dx^2} - 4\frac{dy}{dx} - 4y = X.$$

2. Find the complete solution of the approximate equations for the horizontal motion of a pendulum when the influence of the earth's rotation is taken into account, viz :

$$\frac{d^2x}{dt^2} - 2r\frac{dy}{dt} + \frac{gx}{l} = 0$$

$$\frac{d^2y}{dt^2} + 2r\frac{dy}{dt} + \frac{gy}{l} = 0$$

3. Solve the simultaneous differential equations,

$$\frac{dx}{dt} - 3x + y = 0 \qquad \frac{dy}{dt} - x - y = 0$$

4. Investigate and state the rule for deduciug the complete primitive of the differential equation $P\,dx + Q\,dy + R\,dz = 0$, ($P$, Q and R being functions of x) when the proper condition is fulfilled.

a, apply it to the equation

$$z\,dz + (x - a)\,d\,x = \{h^2 - z^2 - (x - a)^2\}\,dy$$

5. Find the orthogonal trajectory of the system of curves represented by the equation $y = c\,x^n$.

6. Find the curve in which the subtangent is equal to x^2.

7. Find the complete primitive of

$$a\,\frac{d^2y}{dx^2}\,\frac{d^3y}{dx^3} = \sqrt{\left\{1+\left(\frac{d^2y}{dx^2}\right)^2\right\}}$$

8. If $y_1, y_2 \ldots y_n$ represent n distinct values of y, each containing an arbitrary constant, which individually satisfy the linear equation

$$\frac{dy^n}{dx^n} + X_1\,\frac{d^ny^{-1}}{dx^{n-1}} + X_n\,y = 0$$

prove that the complete value of y will be

$$y = y_1 + y_2 \ldots + y_n$$

9. The complete primitive of a differential equation is

$$y + c = \sqrt{x^2 + y^2 - a^2},$$

wherec is the arbitrary constant. Show that the singular solution is and that it may be connected with the mitipive by either of the equivalent relations

$$c = -y \text{ and } c = \sqrt{a^2 - x^2}$$

10. Solve $y = \frac{dy}{dx} + \sqrt{1 + \left(\frac{dy}{dx}\right)^2}$

11. The equation $2\,x\,y\,dx + (y^2 - 3\,x^2)\,dy = 0$, has an integrating factor which is a function of y; determine it and integrate the equation.

12. Find the necessary and sufficient condition that $Mdx + Ndy = 0$ should be an exact differential :

a. deduce the rule for solving the aquation and apply it to

$$\frac{dx}{\sqrt{x^2+y^2}} + \left\{1 - \frac{x}{\sqrt{x^2+y^2}}\right\}\frac{dy}{y} = 0.$$

13. Integrate the homogeneous equation

$$x\,dy - y\,dx - \sqrt{x^2+y^2}\,dx = 0$$

14. Eliminate A and a from $y = A\,Cos\,(n\,x + a)$.

15. If $x = (a+b)\,cos\,\theta - b\,cos\left(\frac{a+b}{b}\right)\theta$

$$y = (a+b)\,sin\,\theta - b\,sin\,\frac{a+b}{b}\,\theta$$

find the value of $\frac{d^2y}{dx^2}$.

VII.

EXPERIMENTAL PHYSICS.—*Wave Theory of Light.*

FRIDAY, APRIL 25TH:—MORNING, 9 to 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Give Huyghens' construction for the directions of the two refracted rays in the case of double refraction in Iceland spar?

2. Show in what manner the rectilinear propagation of light is reconciled with the Wave Therey?

3. A beam of homogenous light has been brought to a focus by a lens, and subsequently falls on a sharp edge; account for the formation of the fringes thence resulting?

4. Describe and explain by the principle of interference the formation of the series of spectra by a grating?

5. Show how the wave-lenghts may be obtained from the spectra formed by gratings?

6. In the phenomena of thin plates, show that the successive thicknesses of the plate for which the intensity of the reflected light is greatest or least vary for different obliquities as the secant of the angle of incidence on the exterior medium?

7. Describe and explain the phenomena discovered by M. Haidinger by which polarized light may be recognized by the naked eye?

8. Describe Fresnel's rhomb and explain its use?

ENGLISH LANGUAGE LITERATURE AND HISTORY.

FIRST YEAR.

ENGLISH LITERATURE AND LANGUAGE.

TUESDAY, APRIL 8TH:—MORNING, 9 to 1.

Examiner,.....CHAS. E. MOYSE, B.A.

(*A*) 1. What do you know of Cædmon and his work? How might Milton have seen it?

2. Mention the various kinds of dramatic entertainments in England previous to the establishment of the regular Drama, and explain the nature of each.

3. Explain clearly what is meant by the Renaissance. When did its influence reach England? Show where and how it was felt.

4. Name the first regular tragedy and the first two regular comedies in English. What do you know about them? Who wrote Tamburlaine? why is it noteworthy?

5. Name some "direct" and some "indirect" Spenserians. What title is often applied to Spenser?

6. Sketch the outline of Mother Hubbard's Tale. Set forth the aim and the character of the Faerie Queene. What modern set of poems closely resembles it? Point out some of the similarities. What do you know concerning the Spenserian stanza?

7. What were the chief characteristics of the Elizabethan period? Show that they are reflected in its Literature. (Do not refer to Spenser.

8. Choose any ten writers since 1500, and opposite the name of each write the name of one of his works. Add a note saying what kind of work each is. (No repetition of previous matter allowed.)

(*B*.) Grammar and Analysis:—

Analyse grammatically;—(*a*) The air feels keen. (*b*) I *shall* tell *you* the secret, when I see you. (*c*) *As* the tree falls, so *it* wil llie. (*d*) I know that *he* would never have spread *such* a report, if he had *not* believed what your *brothers* told him.

(*e*) You take my house when you *do* take the prop
That doth sustain my house: you take my life
When you do take the means whereby I live.

(*f*) Make historical notes on the words and parts of words italicized in the preceding extracts. Complete your answer by explaining the inflections of the Personal and the Possessive pronouns which were noticed in the lectures.

(*g*) Write the first person singular of the fundamental tenses of the indicative mood of an intransitive verb.

(*h*) Classify such consonants in the first line of extract (*d*) as come under Grimm's Law. If they occur in English words what Classical consonant will represent each ? Can you give two word-examples ?

SECOND YEAR.

ENGLISH LITERATURE.

MONDAY, APRIL 7TH:—MORNING, 9 TO 12.30.

Examiner,.....CHAS. E. MOYSE, B.A.

1. What do you know concerning the Hotel Rambouillet and the French Academy ?

2. Criticise the term "Augustan" as applied to early eighteenth-century literature.

3. Who wrote the following novels :—Robinson Crusoe, Gulliver's Travels and Tom Jones ? Mention noteworthy points regarding each book.

4. Show that the French Revolution was inevitable.

5. Mention, without any detail whatever, some of the immediate causes of the French Revolution.

6. What was said in the lectures regarding Joseph Priestley, James Montgomery, William Godwin, Edmund Burke ?

7. Notice some features of Southey's University life, and explain the Pantisocracy.

8. Sketch Wordsworth's life prior to his going to Cambridge. What did he think of University work and life ?

9. State as clearly and logically as you can the most important points advanced in the Prelude.

SECOND YEAR.

ENGLISH LITERATURE: SHAKESPEARE; TEMPEST.

MONDAY, APRIL 7TH:—AFTERNOON, 2 TO 4, P.M.

Examiner,..... .....CHAS. E. MOYSE, B.A.

1. What evidence would you adduce to show that the Tempest is one of Shakespeare's late plays?

2 To what "period" does it belong?

3. What were the three Unities? How does the Tempest stand in regard to them?

4. In what ways is the Tempest indebted to its time?

5. (*a*) What shapes does Ariel take in the play? (*b*) What kind of commonwealth would Gonzalo establish? (*c*) What can you learn from the play concerning Caliban's appearance, qualities, and offices? (*d*) What are Caliban's directions for carrying out the plot in which he is concerned? (*e*) How old was Miranda when she came to the island? (*f*) Could she remember anything previous to that? (*g*) Her age at the time of the play? (*h*) Whose aid did Prospero's brother seek in order to overthrow Prospero? (*i*) On what conditions was the aid given? (*j*) Why was not Prospero killed? (*k*) What did Ariel do with the crew of the vessel? (*l*) Whence did Sycorax come to the island? (*m*) In what condition did Prospero first find Ariel? (*n*) How long had Ariel been in it? (*o*) With what food does Prospero threaten to provide Ferdinand? (*p*) What work is given to Ferdinand? (*q*) The name of Alonzo's daughter? (*r*) In what relation does she stand to the play? (*s*) "These our actors, as I foretold you"—continue the speech, and say who speaks it. (*t*) How were Caliban and his confederates befooled? (*u*) What became of their bottles? (*v*) Who was Setebos?

6. Give the meaning (and nothing else) of the following words and phrases:—Yarely, to trash, an undergoing stomach, still-vexed, the wild waves whist, the miraculous harp, chirurgeonly, flat long, you would lift the moon out of her sphere, inch-meal, scamels, my standard, debo*hed, the picture of nobody, by'r lakin, putter out of five for one, dowle; bring a corollary rather than want a spirit, her son dove-drawn, foison, goss, frippery, we steal by line and level.

THIRD YEAR.

RHETORIC AND ENGLISH LITERATURE.

FRIDAY, APRIL 18TH:—MORNING, 9 TO 12.

Examiners,..... } J. CLARK MURRAY, LL.D.
} CHAS. E. MOYSE, B.A.

A. Rhetoric.

1. State one of the subordinate laws for the formation of style, showing its connection with the principal law.

2. Explain what is meant by a *figure of speech*.

3. Improve the following sentences:—

(*a*) These remarks, which reflected very derogatorily upon his character, were delivered extremely sillily and in an uninteresting tone of voice.

(*b*) Arrangements were made fortunately for forwarding forty of the emigrants at once.

(*c*) The inchoation of such a course must eventuate in jeopardising the prospects of his party.

(*d*) I bridle in my struggling muse with pain, that longs to launch into a bolder strain.

4. (*a*) Point out an essential difference between description and narrative. (*b*) State the principles either of external or of internal description.

5. What should be the order of discussion in an argumentative composition?

6. Explain generally what materials may, and what may not, be employed in poetry, stating, specially, why tragic subjects are appropriate.

B. English Literature. Chaucer: Prologue to Canterbury Tales.

1. Of whom is each of the following lines written?

(*a*) But Cristes lore, and his apostles twelve.....

(*b*) He was a janglere and a golyardeys.

(*c*) Than wolde he speke no word but Latyn.

(*d*) And in a glas he hadde pigges bones.

(*e*) He was a gentil harlot and a kynde.

(*f*) For ech of hem made other for to wynne.

(*g*) With many a tempest hadde his berd ben schake.

(*h*) And gladly wolde he learn and gladly teche.

(*i*) Somwhat he lipsede, for his wantownesse.

(*j*) He yaf not of that text a pulled hen.

(*k*) And al was conscience and tendre herte.

Give the exact contexts, or, failing that, their substance. Scan the lines quoted above.

2. What light does the study of Chaucer throw on the following words?—cheer; hotly; farthing; bids; solemn; tapster; thing; but; as; sundry; guess; morrow; mews; girl; burden; mail; eyes; wight daungerous; stately.

3. Describe the Frankeleyn.

4. Give a list of the works usually ascribed to Chaucer, indicating those that are doubtful.

MODERN HISTORY.

FRIDAY, APRIL 4TH:—MORNING, 9 TO 1.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Name the old Spanish kingdoms. Sketch their development, and refer it to "historical geography" when you can.

2. Describe the physical features of Russia, and show how they have determined her history.

3. How was the Western Empire divided in 843 and 887? Who were the rulers of the great divisions?

4. Explain clearly the idea embodied in the Holy Roman Empire.

When did that Empire, as a theory, cease to exist?

5. In what particulars was the succession to the throne of the Empire peculiar? What was the Golden Bull?

6. Where was the Empire of Nikaia? of Trebizond? Of what were they the continuance? Before what foe did they ultimately fall?

7. When did the Great Interregnum take place? What was the little Bull? the Great Schism of the Papacy?

8. Mention the most noteworthy features of the history of Venice and Genoa prior to 1453.

9. On the accompanying outline map mark the locality of each of the following, and mention one historical fact which makes it noteworthy:

Lund; Arles; Algarve beyond Sea; Aversa; Milan; Gnesen; Wisby; Edessa; Zara; Baghdad.

10. A.D. 1125 : A.D. 1453 :—Mention some important phase or event in the history of any four of the chief countries of Europe at or about each of those dates.

11. What do you know concerning More's "Utopia"?

12. What caused Wyatt's rebellion? Its course and result?

13. What steps led to the great Civil War?

14. Sketch the career of Shaftesbury.

B.A. EXAMINATION FOR HONOURS IN ENGLISH.

Shakespeare: *Love's Labour's Lost*; *A Midsummer Night's Dream*; *Hamlet*.

TUESDAY, APRIL 8TH :—MORNING, 9 TO 12.30.

Examiner,.....CHAS. E. MOYSE, B.A

1. Shakespeare's Euphuism: Use Love's Labour's Lost and A Midsummer Night's Dream as the groundwork of a short essay on the subject.

2. What is the inner purpose of Love's Labour's Lost? Show its various aspects. Of what modern work is Love's Labour's Lost the forerunner? Point out differences between them.

3. Show that the spirit-element in A Midsummer Night's Dream is unlike that in the Tempest in every essential particular.

4. What points in the cast of Love's Labour's Lost and a Midsummer Night's Dream betray early work? Gervinus says that the fairies are "beings without delicate feeling and without morality—careless and unscrupulous:" show at some length that the criticism is unwarranted.

5. Compare Hamlet and Ophelia with Romeo and Juliet.

6. What "double action" is there in Hamlet?

7. Give the substance of that part of Hamlet (Act V.) which concerns Hamlet, Horatio and the Grave-digger.

(*b*) Give, in some detail, the plot of A Midsummer Night's Dream.

[Quote whenever quotations will substantiate your statements.]

B.A. EXAMINATION FOR HONOURS IN ENGLISH.

Campbell.—*Pleasures of Hope.*—Shelley: *Cinci.*

WEDNESDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. In what way does Campbell refer to Elijah; Byron; Newton; Timour; Brama; Iona's saint; Arion? Add a note concerning "Iona's saint" and Arion.

2. Criticise the Pleasures of Hope, (*a*), in regard to plan; (*b*), in regard to style.

3. What do you know of the matter of the sections that commence thus?

(*a*) Friend of the brave! in peril's darkest hour.

(*b*) Warsaw's last champion from her height surveyed.

(*c*) There shall he pause with horrent brow to rate, What millions died.....

(*d*) Eternal Hope! when yonder spheres sublime Peal'd their first notes.....

4. On what grounds would you class the Cenci among the highest dramatic efforts in English?

5. In the Preface Shelley says he has "committed" only one plagiarism intentionally. Comment on that remark.

6. Give the outline of the scene in "The Hall of Justice" (Act V, Sc. II) and quote when you are able to do so.

B.A. EXAMINATION FOR HONOURS IN ENGLISH.

Hallam: *Constitutional History,* caps. 1, 5-14; Macaulay: *History of England,* Vol. I., caps. 2 & 3.

WEDNESDAY, APRIL 16TH:—2 TO 5 P.M.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Bacon remarks concerning the laws of Henry VII.: "deep and not vulgar, not made upon the spur of a particular occasion for the present." What is Hallam's comment on this?

2. What do you know of "Mr. Cope's bill and book"?

3. What was the cause of "the most serious disagreement on record between the Crown and the Commons since the days of Richard II. and Henry IV"? (1562-66.)

4. Was James I. a legitimate sovereign? Explain the case of "commendams" in his reign.

5. What four great grievances are set forth in the Petition of Right?

6. Name the chief acts passed by the Long Parliament.

7. How does Hallam show that Cromwell was "de facto sovereign of England from June, 1657, to his death in September, 1658?"

8. What was the act against Conventicles?

9. Mention the leading points noticed by Hallam in regard to the impreachment of Clarendon.

10. Was the "Dispensing Power" a constitutional fact? What was Sir Edward Hales's case?

11. Briefly point out the state of European Politics in the reign of Charles II.

12. What were the chief watering places in the reign of Charles II.?

13. Make a few remarks on London coffee-houses under the later Stuarts.

B.A. EXAMINATION FOR HONOURS IN ENGLISH.

ANGLO-SAXON.

THURSDAY, APRIL 17TH:—2 TO 5 P.M.

Examiner,..... .....CHAS. E. MOYSE, A.B.

1. Translate:—

Beowulf, lines, 52-60; 80-87; 151-156; 214-221; 267-277; 319-333; 381-392.
Cædmon, lines, 11-15; 111-119; 156-163.
Gregory's Pastoral Care, lines, 39-66.

2. Comment on the words in the extracts from Beowulf, which were noticed in the lectures.

3. On the margin of your translation write the principal parts of the strong verbs that occur.

4. Take three Anglo-Saxon stems, and write a group of Derivatives from each.

5. (Translation at sight.)

(*a*) A passage in prose from the Blickling Homilies.

(*b*) A passage in verse from "Daniel."

B.A. EXAMINATION FOR HONOURS IN ENGLISH.

Pope: *Essay on Criticism; Essay on Man; Moral Essays.*

FRIDAY, APRIL 18TH:—2 TO 5 P.M.

Examiner,.....C. E. MOYSE, B.A.

1. (*a*) Some on the leaves of ancient authors prey.
(*b*) Drink deep or taste not the Pierian spring.
(*c*) Some have at first for Wits, then Poets past.
(*d*) Let such teach others who themselves excel.
(*e*) Avoid Extremes; and shun the fault of such.
(*f*) A needless Alexandrine ends the song.
(*g*) When Ajax strives some rock's vast weight to throw.
(*h*) Envy will merit, as its shade, pursue.
(*i*) For Fools rush in where Angels fear to tread.
(*j*) No place so sacred from such fops is barr'd.

Give the context of each of these lines, or, failing that, refer each to its place in the argument of the poem. Quote ten consecutive lines from the Essay on Criticism; also ten from the Essay on Man.

2. Essay on Criticism: In what relations does Pope mention Dryden and the Scotists and Thomists? What does he think of Horace and Quintilian? How does he deal with the History of Criticism from the days of Leo. X.?

3. Essay on Man: What parallel does Pope introduce to explain the disorder in the moral world? How does he rebut the argument that there is no Vice or Virtue?

> See him from Nature rising slow to Art!
> To copy Instinct then was Reason's part;
> Thus then to Man the voice of Nature spake—

to what effect? What "alone is Happiness below?" Answer these questions: "What is Fame?" "Look next on Greatness: say where Greatness lies?"

4. Give the title of each of the Epistles of the Moral Essays.

5. Give the argument of the Epistle which you know best. What do you know concerning "poor Narcissa;" Euclio; Chloe; Cotta; Timon's Study and Chapel.

6. Write an essay on the works of Pope on which you have been examined, under these heads: (*a*) Their philosophy and its worth; (*b*) Their relation to their time.

B.A. EXAMINATION FOR HONOURS IN ENGLISH.

Shelley: *Adonais.*—Tennyson: *In Memoriam.*

MONDAY, APRIL 21ST:—2 TO 5 P.M.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Represent side by side, and in a tabular form, the progressive thought of Lycidas and Adonais.

2. Explain the following extracts: the third among the sons of light; (who, in your opinion are the other two?) The Pythian of the age; The Pilgrim of Eternity; one frail Form; If it be He, who gentlest of the wise, taught, soothed, loved, honoured, the departed one; a Spirit without spot. Explain stanza xlvi.

3. Set forth in a tabular form, and as minutely as time will allow, the development of In Memoriam. Notice as you proceed the minor devices of the poet to make that development clear.

4. Quote the first stanza of the poem and give explanations of the allusion therein. Explain: intervital gloom; the days before God shut the doorways of his head; the doubtful shore, Where thy first form was made a man; The bar of Michael Angelo; the sea-blue bird of March. Refer each expression to its place in the poem.

5. Quote the Section, beginning,—

So careful of the type? but no

6. Take up any sub-division of In Memoriam and work out its detail.

(Quote when you can.)

7. Give the contexts of:—

Break thou deep vase of chilling tears.
There sat the Shadow feared of man.
Calm is the morn without a sound.
And Thought leapt out to wed with Thought.
Her eyes are homes of silent prayer.
Short swallow-flights of song that dip.....
But thou art turn'd to something strange.
Hold thou the good: define it well.
That nothing walks with aimless feet.
A secret sweetness in the stream.
I wage not any feud with Death.
You tell me, doubt is Devil-born.
Ring in the Christ that is to be.

B.A. EXAMINATION FOR HONOURS IN ENGLISH.

TUESDAY, APRIL 22ND :— AFTERNOON, 2 TO 5.

Examiner, ... CHAS. E. MOYSE, B.A.

Tennyson : *Idylls of the King.*

1. Mention the Idylls in their proper order.

2. In what respects do they resemble the Faerie Queene ?

3. Are they intended to have a contemporaneous application ?

4. Why are there various stories as to Arthur's birth ?

5. Sketch the literary history of the Arthur legend.

6. Unfold the allegory in Gareth and Lynette.

7. What do you know of the Holy Graal ? Give the outline of Tennyson's Idyll on that subject.

8. "Vivien" has been described as "a wanton intrigue between the sage of Arthur's camp" and a "flirt of the sixth century." Estimate such criticism.

9. Say where each of the following lines occur :—

Unfaith in aught is want of faith in all.
And faith unfaithful kept him falsely true.
For mockery is the fume of little hearts.
For women be so light.
I have had my day and my philosophies.
Too late, too late ! ye cannot enter now.
More things are wrought by prayer....
Wearing the white flower of a blameless life.

10. Describe the last meeting of Arthur and Guinevere. (Quote when you can.)

B.A. EXAMINATION FOR HONOURS IN ENGLISH.

EARLY ENGLISH.

WEDNESDAY, APRIL 23RD :—2 TO 5 P.M.

Examiner, ...CHAS. E. MOYSE, B.A.

1. Translate :—XI. (B)
XII. 326-381.
XV. Passus iii. 44-72.
XVI. 400-487.
XX. 193-348.

2. Take lines 60-64 of the third Passus of ext. xv., and explain inflections and noteworthy words.

B.A. EXAMINATION FOR HONOURS IN ENGLISH.

Cowper: *The Task.*

THURSDAY, APRIL 24TH:—2 TO 5 P.M.

Examiner,..... .....CHAS. E. MOYSE, B.A.

1. What thoughts are connected with the Peasant's Nest? the Bastile? Who are truly "gay"? How does God treat Atheists? "They have fallen, each on his field of glory": who? "Great princes have great playthings": what are they? In what way does Cowper speak of his tame hare? To what famous mulberry tree does he allude in the Task?

2. Give a synopsis of The Winter Evening.

3. "Would I describe a preacher such as Paul;" describe him and his opposite.

4. Quote any two passages in the Task which you think are especially good.

5. Write an essay on the Task, treating on Cowper's handling of nature and the relation of his philosophy and his religion to their time.

B.A. EXAMINATION FOR HONOURS IN ENGLISH.

Buckle, *History of Civilization* (4 *caps.*): Arnold, *Essays in Criticism.*

FRIDAY, APRIL 25TH:—2 to 5 p. m.

Examiner,..... .....CHARLES E. MOYSE, B.A.

1. Why is the Science of History in its infancy? What two different doctrines represent different stages of civilization? What does Buckle say of suicide? of the Arabs? of the distribution of wealth? of the food of the Irish labourer? of the progress of Brazil? of the ancient literature of India?

2. How is superstition increased by physical phenomena?

3. What differences exist between the progress of England and the progress of Spain?

4. Give the leading points of Buckle's summary at the end of the Chapter. What contrasts existed between Scotland and Spain?

5. Give Buckle's leading statements about the Scotch towns.

6. Give Arnold's definition of Criticism.

7. What does Arnold say concerning the critical and the creative powers? Should a poet read?

8. Give instances of English self-satisfaction.

9. What do you think of Arnold's main arguments in support of Academies?

THIRD AND FOURTH YEARS: EXAMINATION FOR HONOURS.

CONSTITUTIONAL HISTORY. (*Lectures.*)

THURSDAY, APRIL 3RD.—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Notice some leading features of constitutional history during the reigns of the four Norman kings.

2. Give an account of the ecclesiastical struggle in the reign of Henry II.

3. What was the Assize of Clarendon?

4. Sketch the events that led up to Magna Carta. Notice important articles of Magna Carta, and criticize the measure as a whole.

THIRD YEAR.

EXAMINATION FOR HONOURS.

ANGLO-SAXON.

FRIDAY, APRIL 4TH:—MORNING, 9 TO 1.

Examiner,.....CHAS. E. MOYSE, B.A.

A. Translate literally:—

(*a*) Sothlice sume feollon on stænihte.....for thrysmodon tha.
(*b*) Tha cwæth he answariende heora anum.....feawa gecorene.
(*c*) Wulfstan sæde thæt he gefore of Hæthum.....hætt Wislemutha.
(*d*) Ond thær is mid Estum an mægth thæt.....sam winter.

B. Passages at sight:—

C. Grammar:—1. Parse each of the following words, and give the principal of the verb from which it comes; com, ahruron, feoll, geceas, flit, smeocende, awurpe, eode, sawenne, sprungon, sprungenre, forscruncon weoxon, geworden, slepon, cwædon, geseah, standan, agif, ongunnon.

2. Decline se goda mann; an god mann.

3. Give the gender of, and decline, dæd, boc, scip, burg, dæg, hus, eage.

4. Conjugate the verb bindan.

5. Decline, thes, se, hwa, he, thu.

D. Literature:—

1. Notice general features of Anglo-Saxon literature.

2. What do you know about Cædmon and his work?

THIRD YEAR.

EXAMINATION FOR HONOURS IN ENGLISH.

EARLY ENGLISH.

SATURDAY, APRIL 5TH :—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

Translate :—

Ext. I, lines 37-53.

" II, Ps. civ, lines 53-84.

" IV, (B).

" VI, lines 1-49.

" IX, lines 15-71.

Grammar

1. Give the various dialectic forms of the personal pronouns.

2. How do the inflections of the verb determine the dialect?

3. Take all the parts of speech except the preposition and the conjunction, and show that English forms are due to a weakening of the Anglo-Saxon ; and give laws for such weakening, when you can.

THIRD YEAR.

EXAMINATION FOR HONOURS IN ENGLISH.

Milton : *Minor Poems ; Paradise Lost, Books I. and II.*

THURSDAY, APRIL 10TH :—MORNING, 9 TO 12,

Examiner,.....CHAS. E. MOYSE, B.A.

1. Quote the first twenty lines of L'Allegro and of Il Penseroso, and paraphrase them.

2. Give the context of :—

(*a*) Of linked sweetness long drawn out.

(*b*) And the mill[illegible] singeth blithe.

(*c*) Where more is meant than meets the ear.

(*d*) Casting a dim religious light.

3. Write a criticism of Lycidas.

4. Quote any ten consecutive lines from Lycidas, and give in the margin the meaning of words that require to be explained. How has Ruskin used Lycidas?

5. What do you know concerning the plan of a Masque? Give the more important points of criticism in the lectures on the subject matter of Comus.

6. Give the history of the god Comus.

7. Mention the leading points in the Proem of the Attendant Spirit.

8. Explain the meaning of the underlined words in the following phrases: *Baleful* eyes; torture—*urges; welt'ring* by his side; our *afflicted* powers; your wearied *virtue;* a *horrid* front; A thousand demi-gods on golden seats, *Frequent and full;* to *converse* with everlasting groans.

9. What do you know concerning Belial's speech in Pandemonium?

THIRD YEAR.

Chancer:—*Knightes Tale; Nonne Prestes Tale.* Spencer:—*Faerie Queene,* Bk.I.

MONDAY, APRIL 14TH:—MORNING, 9 TO 12.

Examiner, ... CHAS. E. MOYSE, B.A.

1. How does Chaucer introduce Perotheus? The "wenged god Mercurie?" How did Palamon get out of prison?

2. Describe the general appearance of the lists in which Palamon and Arcite fought; the statue of Mars; the statue of Venus; the procession at Arcite's funeral.

3. Describe the household of the "poure wydow." Tell very briefly the dreams and name the dreamers used to refute the argument from "daun Catoun."

4. Mention two works in English Literature referred to in The Nonne Prestes Tale.

4. Explain these words, and add a note when you can: seistow; wanhope; gery Venus; laund; breeme; lesynges; a swymble in a swough; vese; the schippes hoppesteres; deye; me mette; Phisiologus.

6. What play, attributed to Shakespeare, is founded on the Knightes Tale?

7. Set forth the plan and the aim of the Faerie Queene.

8. Sketch the career of Una.

9. What do you know concerning Spenser's stanza?

10. Of what modern poem is the Faerie Queene a forerunner?

THIRD YEAR.

EXAMINATION FOR HONOURS IN ENGLISH.

History: *Hallam Middle Ages, Caps. i., iii., v., viii., ix.;* Bryce, *Holy Roman Empire.*

MONDAY, APRIL 21ST. :—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Who were the six Peers of France?

2. What French King undertook the two last Crusades? What do you know of those Crusades

3. Who was the Catapan? What parts of Italy were possessed by, or acknowledged, the Eastern Empire? How were they lost to that Empire?

4. What did the Peace of Constance (1183) secure? What do you know concerning Rienzi?

5. Sketch the history of the Turks, as conquerors, down to 1456.

6. Mention the leading facts of the Constitutional history of the reign of Edward III.

7. What does Hallam say concerning the Troubadours and the nature of their literature?

8. What was the theory of the Mediæval Empire? Who was the last Emperor crowned at Rome?

9. Mention clearly but briefly what causes led to the overthrow of the Holy Roman Empire.

10. In what connection does Bryce mention Hippolytus a Lapide, and why? The Peace of Westphalia: when? its nature?

11. Choose an important Emperor and sketch noteworthy features of his reign. Why is Napoleon I. mentioned in a History of the Holy Roman Empire?

THIRD YEAR.

EXAMINATION FOR HONOURS IN ENGLISH.

Dryden:—*Annus Mirabilis; Absalom and Achitophel; Hind and Panther; Preface to Fables.* Macaulay:—*Hist. of Eng,* Vol. 1, Cap. 1.
Milton:—*Areopagitica.*

WEDNESDAY, APRIL 23RD:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Present the topics of the Annus Mirabilis in tabular form. Give a few examples of strained imagery from the poem.

2. What reasons did Absalom assign for not prosecuting designs against David? Of whom are these lines written?—

> Erect thyself, thou monumental brass.
> In public storms, of manly steadfastness.
> Nor ever was he known an oath to vent,
> The court he practised, not the courtier's art,
> The Sanhedrin long time as chief he ruled.

Quote from Absalom and Achitophel lines that have become proverbial.

3. What do you know concerning the authorship of the Second Part of Absalom and Achitophel? Indicate the nature of Dryden's contribution.

4. In the Hind and Panther there are "two Episodes or Fables:' what are they? Give their outline.

5. Set forth the arguments advanced in Part I. of the Hind and Panther.

6. What comparisons does Dryden make between Chaucer and Ovid?

7. Mention the heads of the chief arguments that Milton advances on behalf of the liberty of the Press, and also the objections which he imagines an adversary to make.

8. How does Macaulay maintain these statements:

During the thirteenth century we must seek for the origin of our freedom, our prosperity, and our glory.

The precedents of the Middle ages are still valid precedents (one example is given).

9. Indicate the character of Laud.

THIRD YEAR.

EXAMINATION FOR HONOURS IN ENGLISH.

Wordsworth : *The Prelude.* Burke : *Thoughts on Present Discontents*; *Reflections on the Revolution in France.*

FRIDAY, APRIL 25TH :—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. What does Wordsworth say of his boyish sports? What of his mother? Of what "model" child does he disapprove? (Bk. I.) What spectacle awakened in Wordsworth "a dim and undetermined sense of unknown modes of being?"

2. What does Wordsworth think of Geometry, and what incident does he relate in connection with it? What was the story of the Maid of Buttermere, where and in what connection does he allude to it? "Among that band of officers was one;" describe his character.

3. Mention some leading points in Book IV. where Wordsworth describes his feelings during the summer vacation after his first residence at Cambridge.

4. Describe briefly, but clearly, the logical development of the Prelude.

5. What three-fold schene is the cause of discontent, and how was it recommended to the people?

6. Does the King owe his crown to the choice of his peonle? What is "the characteristic essence of property"? Does Burke approve of it? Did the French clergy and noblesse contribute to the state?

7. Choose one of the major arguments in the Reflections, and show how Burke develops it.

LOGIC AND MENTAL AND MORAL PHILOSOPHY.

INTERMEDIATE EXAMINATION.

JEVONS' LOGIC.

MONDAY, APRIL 21ST:—MORNING, 9 TO 12.

Examiner,..... ....J. CLARK MURRAY, LL.D.

1. Select the categorematic words in the following sentence:—

"Some feelings are to mortals given,
With less of earth in them than heaven."

2. Explain the meaning which each term in the above sentence bears in extension and intension respectively.

3. Distinguish subject, predicate, and copula in the above sentence.

4. State the converse and all the opposites of the above sentence.

5. Distinguish the several terms and propositions in the following syllogism:—

"Our natural appetites are liable to excess; but they are not blameworthy: therefore some things which are liable to excess are not blameworthy."

6. Name the mood and figure of the above syllogism, and reduce it to the first figure.

7. Take one of the following formulæ, and explain why it is illegitimate:—

(*a*)	(*b*)	(*c*)
Some y is x;	All y is x;	Some y is x;
No z is y;	All y is z;	All z is y;
$\therefore$ Some z is not x,	$\therefore$ All z is x.	$\therefore$ Some z is x.

8. State whether, and why, the following arguments are illegitimate:—

(*a*) If the study of the classics assists us in making money, then it is useful; but it is evidently useless, as it does not assist us to make money.

(*b*) If the cost of producing cotton cloth is reduced, its price will fall; but its price has fallen, and therefore the cost of production must be reduced.

(*c*) If all men were the best judges of their own interest, democracy would be the best form of government; but as they are not, this cannot be the best form of government.

9. (*a*) Explain the nature of the Fallacia Accidentis and Ignoratio Elenchi. (*b*) Give an example of either.

10. Explain the doctrine of the Quantification of the Predicate.

11. Explain, and illustrate by an example, one of the methods of induction.

12. Distinguish the empirical and the deductive methods.

THIRD YEAR.

ADDITIONAL IN MENTAL AND MORAL PHILOSOPHY.

HAMILTON'S PHILOSOPHY AND MILL'S LOGIC (Books I.-III.,

FRIDAY, 4TH APRIL :—MORNING, 9 TO 12.

Examiner, ...J. CLARK MURRAY, LL.D.

1. Give Hamilton's definition of philosophy, and his classification of the philosophical sciences.

2. Explain the classification (*a*) of mental phenomena, (*b*) of the cognitive faculties.

3. Explain any two of the following subjects :—(*a*) the relation of sensation and perception ; (*b*) the classification of the qualities of matter ; (*c*) the theories of perception ; (*d*) the proof of the existence of latent mental states ; (*e*) the laws of reproduction.

4. Explain either (*a*) the controversy between Nominalists and Conceptualists, or (*b*) the Law of the Conditioned.

5. "Names are names of things, not of our ideas." Explain this statement of Mill's, and compare it with his doctrine of nameable things.

6. State fully either (*a*) Mill's theory regarding the nature of inference, or (*b*) his theory regarding the necessity of geometrical truths.

7. Explain either (*a*) the nature of induction, or (*b*) the Law of Causality.

8. Explain fully, and illustrate by an example, one of the methods of experimental inquiry.

THIRD YEAR.

HONOURS IN MENTAL AND MORAL PHILOSOPHY.

WEDNESDAY, 16TH APRIL:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

I. Berkeley's Principles of Human Knowledge.

1. (*a*) What is the "opinion strangely prevailing among men," which Berkeley controverts? (*b*) What is the doctrine on which he considers it to depend? (*c*) State his criticism of the opinion as dependent on the doctrine.

2. Explain Berkeley's doctrines of second causes, and of the distinction between real things and ideas of things; and answer the objections to his theory which urge that it abolishes second causes, as well as the distinction between reality and mere idea.

3. In what senses may objects be said to be "external," according to Berkeley?

4. Sketch Berkeley's remarks either (*a*) on the distinction between absolute and relative motion, or (*b*) on the mathematical doctrine of infinitesimal quantities.

II. Thomson's Outline of the Laws of Thought.

1. Explain the different meanings of the distinction between *form* and *matter*.

2. (*a*) Illustrate the distinction between the three powers of a conception, or (*b*) compare Thomson's doctrine of predicables with the common doctrine.

3. Explain the distinction (*a*) between mediate and immediate inference, (*b*) between figured and unfigured syllogisms.

4. What alternatives does Thomson allow to the canon requiring that the middle term must be distributed?

5. State (*a*) the general canon of mediate inference, (*b*) the special canons of the three figures.

6. Give either (*a*) Thomson's table of categories, or (*b*) his classification of the sciences.

THIRD YEAR.

HONOURS IN MENTAL AND MORAL PHILOSOPHY.

CICERO'S DE NATURA DEORUM

AND

GREEK PHILOSOPHY.

FRIDAY, 25TH APRIL:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. State, along with the names of their supporters, any four of the opinions "de natura deorum," which Velleius reviews.

2. State, after Velleius, the doctrine of Epicurus on the existence, form, and life of the gods.

3. State Cotta's criticism of the Epicurean doctrine on the form of the gods.

4. Give an outline of the Second Book of the *De Natura Deorum*.

5. "Zeno enim ita concludit: 'Quod ratione utitur, melius est quam id quod ratione non utitur. Nihil autem mundo melius Ratione igitur mundus utitur.' Hoc si placet, jam efficies, ut mundus optime librum legere videatur. Zenonis enim vestigiis hoc modo rationem poteris concludere: 'Quod literatum est, id est melius quam quod non est literatum. Nihil autem mundo melius. Literatus igitur est mundus.' Isto modo etiam disertus, et quidem mathematicus, musicus, omni denique doctrina eruditus, postremo philosophus erit mundus." Translate, and discuss whether this is a conclusive *reductio ad absurdum*.

6. Write a note on any one of the philosophers, Pythagoras, Zeno Eleaticus, Heraclitus, Democritus.

7. Sketch the Ethics either of Plato or of Aristotle.

8. Sketch the history of the Sceptical School.

ORDINARY B. A. EXAMINATION.

CALDERWOOD'S HANDBOOK OF MORAL PHILOSOPHY.

TUESDAY, APRIL 1ST.—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL D.

1. Explain (*a*) the origin of the names, Ethics and Morals, (*b*) the sphere of the science they designate.

2. Explain and illustrate the statement, that "the general truths involved in moral judgment are not generalised truths dependent for their validity on an induction of particulars, but self-evident truths known independently of induction."

3. (*a*) Explain the terms, Right and Obligation. (*b*) Distinguish perfect and imperfect rights.

4. Sketch the development theory (*a*) on the origin of knowledge, (*b*) on the knowledge of moral distinctions.

5. How is obligation explained on the utilitarian theory?

6. Explain Calderwood's classification of natural impulses.

7. Explain Necessitarianism.

8. What are the laws which regulate the formation of character?

ORDINARY B. A. EXAMINATION.

ROGERS' MANUAL OF POLITICAL ECONOMY.

WEDNESDAY, APRIL 2ND.—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Show that acts of exchange imply reciprocal benefits.

2. Point out some of the advantages arising from the division of labor.

3. (*a*) Why do communities use as little money as possible? (*b*) What substitutes for it do they employ?

4. (*a*) What is capital? (*b*) How is it employed?

5. Distinguish interest, profit, and discount.

6. Explain the theory of rent.

7. Describe the *metayer* tenancy of land.

8. Explain (*a*) the law of demand and supply, (*b*) its effect on prices.

9. Discuss the different effects of paying war expenditure out of annual income or by a loan.

10. Distinguish direct and indirect taxes, illustrating the distinction by examples.

B.A. EXAMINATION.

ADDITIONAL IN MENTAL AND MORAL PHILOSOPHY.

LORIMER'S INSTITUTES OF LAW.

THURSDAY, APRIL 24TH :—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Classify the sources (*a*) of natural, (*b*) of positive law.

2. What is meant by the autonomy of human nature?

3. "The rule of life is prescribed by our whole nature." Explain this proposition, and connect it with Lorimer's theory of conscience.

4. State Lorimer's theory of the relation between justice and charity.

5. Explain the sense in which alone liberty implies equality, distinguishing analytic and synthetic justice.

6. Give a detailed account either (*a*) of the secondary sources of positive law, or (*b*) of its objects.

B.A. EXAMINATION.

ADDITIONAL IN MENTAL AND MORAL PHILOSOPHY.

MODERN PHILOSOPHY.

FRIDAY, 25TH APRIL :—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Describe the revolutions which characterised the transition-period between mediaevalism and modern thought.

2. Sketch, in outline, the development of empiricism under Locke's influence both in England and in France.

3. Sketch, with some fulness, the philosophy either (*a*) of Descartes, or *b*) of Spinoza, or (*c*) of Leibnitz.

4. Tell what you know of any two of the following philosophers :—Malebranche, Condillac, Bonnet, Helvetius, Berkeley, Hume, Wolff.

5. Describe the distinctive characters of the "illumination" in France and in Germany.

6. Explain the new departure of empiricism in our own time.

B.A. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

ARISTOTLE'S NICOMACHEAN ETHICS.

FRIDAY, 4TH APRIL:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Explain the expression *ἡ μάλιστα κυριωτάτη καὶ ἀρχιτεκτονικὴ ἐπιστήμη*.

2. (*a*) Give in detail Aristotle's division of the *ψυχή*. (*b*) With which part has virtue to do? (*c*) Distinguish the kinds of virtue based on this division.

3. (*a*) Distinguish *πάθος, δύναμις, ἕξις*. (*b*) Under which of these does virtue come, and why?

4. *Ἔστιν ἄρα ἡ ἀρετὴ ἕξις προαιρετική, ἐν μεσότητι οὖσα τῇ πρὸς ἡμᾶς, ὡρισμένη λόγῳ καὶ ὡς ἂν ὁ φρόνιμος ὁρίσειεν*. Explain this definition in detail.

5. Illustrate this definition by a comparison of one of the virtues with collateral vices.

6. Define *νοῦς, ἐπιστήμη, σοφία, φρόνησις, τεχνή*. Explain their position in the Aristotelian classification of the virtues.

7. Distinguish *κακία, ἀκρασία, θηριότης*, mentioning the opposite of each.

8. Give an outline either of Book V. (on justice) or of Book X. (on pleasure).

B. A. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

DESCARTES' METHOD AND MEDITATIONS

AND

SPINOZA'S ETHICS.

Examiner,.....J. CLARK MURRAY, LL.D

1. Give an outline of the Method or of the Meditations.

2. Give an outline of the argument, by which Spinoza reaches the unity of substance.

3. Connect with Spinoza's general system the proposition—"Ordo et connexio idearum idem est ac ordo et connexio rerum" (II. 7).

4. Define *action* and *passion*, according to Spinoza.

5. Define (*a*) *affectus*, (*b*) the three *affectus primitivi*, illustrating each by examples.

6. Explain the proposition:—"Quo magis unusquisque suum utile quaerere, hoc est, suum esse conservare conatur et potest, eo magis virtute præditus est; et contra quatenus unusquisque suum utile, hoc est, suum esse conservare negligit, eatenus est impotens (IV. 20).

7. Compare with Kant's categorical imperative the proposition:—"Quatenus homines ex ductu rationis vivunt, eatenus tantum natura semper necessario conveniunt." (IV. 35).

8. Explain fully *amor Dei intellectualis*, showing how it constitutes *libertas, beatitudo, vita æterna.*

B. A. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

MAINE'S ANCIENT LAW.

THURSDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D

1. Describe the earliest notion of law, and its development till the formation of codes.

2. By what agencies does law adapt itself to social changes?

3. Compare English case-law with the Roman *responsa prudentum.*

4. Explain either (*a*) the historical origin or (*b*) the modern development of the law of nature.

5. "Mulier est finis familiae." Illustrate the bearing of this maxim on jural relations in ancient Rome.

6. Explain the connection of early jural relations with testamentary succession.

7. Trace the early history either (*a*) of property or (*b*) of contract.

8. Point out some of the influences of Roman legal conceptions on Western theology.

HONOURS IN MENTAL AND MORAL PHILOSOPHY.

THE PHILOSOPHY OF KANT.

WEDNESDAY, APRIL 16TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. "How are synthetic propositions *a priori* possible?" Explain this question, and its connection with transcendental philosophy.

2. Explain the answer which this question receives in the Transcendental Æsthetic.

3. Take any of the Principles (ground-judgments) of Pure Understanding; explain it, and connect it with the corresponding Category.

4. (*a*) Define an Idea, in the Kantian sense. (*b*) Trace the process by which each of the Ideas is formed.

5. Sketch either (*a*) the solution o the Antimo ıy of Pure Reason, or (*b*) the criticism of the arguments for the existence of the ideal of Pure Reason.

6. Give an outline either (*a*) of the Kritik of Pure Practical Reason, or (*b*) of the Kritik of Judgment.

B. A. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

MILL'S LOGIC.

FRIDAY, 18TH APRIL:—MORNING, 9 TO 12.

Examiner,..... J. CLARK MURRAY, LL.D.

1. State and discuss Mill's doctrine either (*a*) on the import of terms, or (*b*) on the import of propositions, or (*c*) on the distinction between real and verbal propositions.

2. Why are some sciences deductive, while others are still experimental; and how may the latter become deductive?

3. Explain and illustrate either (*a*) any two of the experimental methods, or (*b*) the deductive method, or (*c*) the various modes of explaining the laws of nature.

4. State fully either (*a*) the requisites of a philosophical language, or (*b*) the classification of the fallacies.

5. Explain the doctrine of philosophical necessity, as understood by Mill.

6. Explain carefully the method which Mill regards as being alone applicable to Social Science, pointing out why other methods are inapplicable.

B. A. HONOURS IN MENTAL AND MORAL PHILOSOPHY.

SPENCER'S FIRST PRINCIPLES.

MONDAY, APRIL 21ST:—MORNING, 9 TO 12.

Examiner,..... J. CLARK MURRAY, LL D.

Write a full note on any three of the following subjects:—(*a*) Ultimate scientific and ultimate religious ideas, and their reconciliation; (*b*) Data of philosophy; (*c*) Space, time, matter, motion, and force; (*d*) Direction and rhythm of motion, as implied in the persistence of force; (*e*) Simple and compound evolution; (*f*) Exposition of the Law of Evolution; (*g*) A critique of any aspect of the First Principles.

MODERN LANGUAGES AND HEBREW.

THIRD YEAR.

FRENCH.

FRIDAY, APRIL 4TH :—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M.A., B.C.L.

Translate into English :

1. *Béline.* Il faut, Toinette, que tu m'aides à exécuter mon dessein, et tu peux (*a*) croire qu'en me servant, ta récompense est sûre. Puisque, par un bonheur, personne n'est (*b*) encore averti de la chose, portons-le (*c*) dans son lit et tenons cette mort cachée, jusqu'à ce que j'aie fait mon affaire. Il y a des papiers, il y a de l'argent, dont je me veux (*d*) saisir ; il n'est pas juste que j'aie (*e*) passé, sans fruit, auprès de lui mes plus belles années. Viens (*f*) Toinette, prenons auparavant toutes ses clefs.....*Argan.* Je suis bien aise de voir votre amitié, et d'avoir entendu le beau panégyrique que vous avez fait de moi. Voilà un avis au lecteur qui me rendra sage à l'avenir, et qui m'empêchera de faire bien des choses.

Le Malade imaginaire, A. III., sc. XVIII.

2. *a, d, f.* Write in full the Preterite definite, Subjunctive present, Subjunctive pluperfect and Pluperfect indicative of those verbs.

b, Why is *n'* used ? Give the rule.

c, Why is *le* placed after portons ? Give the rule.

e, At what mood is this verb ? Why that mood ?

3. Translate into English :

Il n'y a point de maladie si osée que de se jouer à la personne d'un médecin. Cela m'échauffe la bile. Ce sont de pures idées dont nous aimons à nous repaître. C'est bien son affaire de se mêler de contrôler la médecine. Ce n'est point le fait de votre fille.

4. Translate into French :

One finds almost all the trades in Montreal : haberdashers, booksellers, milliners, furriers, goldsmiths, stationers, gunsmiths, cabinetmakers, wheelwrights and coachmakers.

5. Give the three rules to form adverbs from adjectives. Give two examples for each rule and two exceptions.

6. Give three cases where the English use the article and the French do not. Give an example for each.

7. What is the difference between : Un *petit* homme and un homme *petit* Un *pauvre* auteur and un auteur *pauvre* ; Un honnête homme and un homme *honnête* ; Un *brave* homme and un homme *brave*.

8. Correct the sentences : *Il a'taqua et s'empara de la ville.*

Il alla et revint de Québec en un jour.

And say in what does the mistake consist.

9. When do you use the Imperfect of the subjunctive mood? Give examples.

10. Translate into French :

You should have come with us to-day, we have had a most pleasant day I may have done it without knowing it. Nature never exhaust itself, provided we know by culture to give it back what it has given. We have nothing that suits him. I found that she had grown very old. We were expecting my brother and sister; neither the one nor the other came. Few people are wise enough to prefer the blame which is useful to them to the praise which betrays them. Those children were bare-headed and bare-footed. The foxes killed many fowls in the poultry-yards. I do not believe that: it is only hearsay. Beauty and wit are valuable endowments when they are heightened by modesty.

INTERMEDIATE EXAMINATIONS.

APRIL, FRIDAY 4TH :—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY M.A., B.C.L.

1. *Phèdre.* Ah! que l'on porte ailleurs les honneurs (*a*) qu'*on* (*b*) m'envoie.
Importune, peux-tu désirer qu'on me voie?
De quoi viens-tu flatter mon esprit désolé?
Cache-moi plutôt : je n'ai que trop parlé.
Mes fureurs au dehors ont osé se répandre :
J'ai dit ce que jamais on ne devait entendre (*c*.)
Ciel! comme il (*d*) m'écoutait! Par combien de détours
L'insensible a longtemps éludé mes discours!
Comme il ne respirait qu'une retraite prompte!
Et combien sa rougeur a redoublé ma honte!
Pourquoi détournais-tu mon funeste dessein (*e*)?
Hélas! quand son épée allait chercher mon sein,
A-t-il parlé pour moi? me l'a-t-il arrachée (*f*)?
Il suffit que ma main l'ait (*g*) une fois touchée,
Je l'ai rendue horrible à ses yeux inhumains;
Et ce fer malheureux profanerait ses mains.

Phèdre, A. III. Sc. I

2. *a.* What *honneurs* does she speak of?
b. To whom does *on* refer?
c. What was it?
d. To whom does *il* refer?
e. What dessein?
f. Why has arrachée two e's
g. Explain the mood and tense *ait touchee.*

3. Who was Eonone in *Phèdre*? Relate in full the part she played in that tragedy.

4. Translate *into French:* To measure other people's corn by one's bushel. The pot calls the kettle black. The bail must pay. To supplant some one. To lay up something for a rainy day. Cobbler stick to your last. *Into English:* manger de la vache enragée. Il est né coiffé. Dans le royaume des aveugles les borgnes sont rois. Trop gratter cuit, trop parler nuit.

5. Explain the difference between *plus* and *davantage; en* and *dans*; *autour* and *alentour.* Give examples.

6. What are called *Poèmes carlovingiens; Poèmes armoricains, Poèmes antiques?* Give the names of some of those *Poèmes.* Which is the most remarkable?

7. What works have Jean de Meung, Froissart, Rabelais, Marot, Montaigne, Mathurin Régnier, written; when did they live?

8. What is the *Satire Ménippée?* When and by whom was it written *A propos de quoi?*

9. What was the Hôtel de Rambouillet! Who were the writers who went there? When was the French Academy founded?

10. Translate into French:

"About ten years ago," said he, "my daily observations of the changes of the sky led me to consider, whether, if I had the power of the seasons, I could confer greater plenty upon the inhabitants of the earth. This contemplation fastened upon my mind, and I sat days and nights in imaginary dominion, pouring upon this county and that the showers of fertility, and seconding every fall of rain with a due proportion of sunshine. I had yet only the will to do good, and did not imagine that I should ever have the power. One day, as I was looking on the fields withering with heat, I felt in my mind a sudden wish that I could send rain on the southern mountains, and raise the Nile to an inundation. In the hurry of my imagination I commanded rain to fall; and by comparing the time of my command with that of the inundation I found that the clouds had listened to my lips.

Rasselas, CHAP. XLII.

THIRD YEAR.

THURSDAY, APRIL 17TH:—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M.A., B.C.L.

1. Traduisez en Anglais:

George. Que prétends-tu prouver ? qu'il n est point d'honnête homme ?
Radolphe. Non, certes ; il en est qu'à bon droit on renomme ;
Il en est qui, les yeux fixés sur le devoir
D'un pas toujours égal marchent sans s'émouvoir.
Leur ferme probité, fière sans arrogance,
Fuit les séductions et brave l'indigence
Aux honneurs mal acquis ils trouvent peu d'appas,
Et les privations ne les fléchissent pas.
Mais pour ranger quelqu'un dans cette classe insigne,
Je demande comment il s'en est montré digne
Et par quel sacrifice, au prix de quel effort,
Il a conquis (*a*) ce nom que l'on (*b*) prodigue à tort
—Tiens ; (*c*) je vais m'expliquer d'une façon plus nette.
Toi-même tu parais un garçon fort (*d* honnête.

2. (*a*) Ecrivez le *futur*, le *subjonctif présent* et *l'imparfait* de ce verbe.

(*b*, *c*, *d*) Analysez *l'*, *tiens*, *fort*.

3. Traduisez en Français :

He is a quarter's rent behind. He will lose the favors of his master if he does not get rid of those habits. His friends often tease him about his odd ways. He has undertaken a task beyond his ability. The conversation runs on a friendly strain. He renewed his complaints about travelling in general, and about public conveyances in particular. Come, you must make up your mind to go. I have quite regained my health, you are not the only one who congratulates me of it. We must commence afresh, since we have not succeeded. If I run away I shall make every one laugh at me.

4. En Anglais :

Vous avez mis tout sens dessus dessous dans ma chambre. Cette affaire ne lui revient pas, il veut y renoncer. Il fendit la presse pour venir me mettre au fait de ce qui s'était passé. Vous pouvez tirer sur nous, à un mois de date, pour le montant de votre facture. Il prend des airs qui ne lui conviennent pas.

5. En quel genre littéraire Voltaire s'est-il élevé au-dessus de tout autre écrivain ? Et en quel genre occupe-t-il la seconde place ? Voltaire était-il athée ? ou agnostique ? Dites en peu de mots le jugement de Paul Albert là-dessus.

6. Traduisez en Français :

But we could have borne all this, had not a fortune-telling gipsey come to raise us into perfect sublimity. The tawny sybil no sooner appeared than my girls came running to me for a shilling apiece to cross her hand with silver. To say the truth I was tired of being always wise, and could not help gratifying their request, because I love to see them happy. I gave each of them a shilling; though, for the honour of the family it must be observed that they never went without money themselves, as my wife always generously let them have a guinea each to keep in their pockets, but with the strict injunctions never to change it.

The Vicar of Wakefield, chap. X.

FOURTH YEAR.

MONDAY, APRIL 21ST :—MORNING, 9 TO 12.

Examiners,..... .... { P. J. DAREY, M. A. / PROF. MILLER.

1. Traduisez : Le calme de cette première heure me rappelle celui des premières années. Alors aussi, le soleil brille gaiement, la brise parfume toutes les illusions, ces oiseaux du matin de la vie qui gazouillent autour de nous ! Pourquoi s'envolent-elles plus tard ? D'où vient cette tristesse et cette solitude qui nous envahissent insensiblement ? La marche semble la même pour l'individu et pour les sociétés : on part d'un bonheur facile, d'enchantements naïfs, pour arriver aux désillusions et aux amertumes ! La route commencée parmi les aubépines et les primevères aboutit rapidement aux déserts et aux précipices ! Pourquoi tant de confiance d'abord, puis tant de doute ? La science de la vie n'est-elle donc destinée qu'à rendre impropre au bonheur ?

SOUVESTRE, *Un Philosophe sous les toits*, ch. IV.

Mais je n'ai pas été élevée comme les autres jeunes filles : orpheline dès ma première enfance, je n'ai jamais été entourée des soins d'une mère ; car la seconde femme de mon père ne m'aimait pas, et j'ai bien souvent pleuré en silence de l'abandon dans lequel je vivais; aussi toute la tendresse que Dieu avait donnée à mon âme, ai-je dû l'y refouler jusqu'au jour où vous m'avez parlé de votre amitié.

BARRIERE ET CAPENDU, *Les faux Bonshommes*, II. 2.

2. Qu'est-ce que l'auteur appelle : *ces oiseaux du matin de la vie ?*—Remplacez le pronom dans : *Pourquoi s'envolent-elles plus tard ?* par son antécédent.—La différence entre *dès* et *dès que*, *pendant* et *pendant que*, *aussitôt* et *aussitôt que*, et formez des phrases dans lesquelles ces mots entrent.—Comment expliquez-vous l'ordre des mots : *ai-je dû ?*

3. Traduisez les termes : est-ce qu'il aurait changé d'avis ? —Touchez-là.—Ah ! à propos ; il faut que je vous donne un conseil. A quel propos ?—De grâce, monsieur, n'insistez pas.—Tu es un brave garçon.—Faire de l'embarras.—Il a lieu de s'en repentir.—Le concert a lieu ce soir.—J'ai fait mon droit.—P. Veux-tu bien te taire ? E. Pourquoi donc ? P. Mais parce que Monsieur Octave est le neveu de Vertillac. E. Bah ! P. Et que ce serait affliger ce cher ami que de parler mal devant lui de son neveu.

4. Expliquez dans la dernière phrase les deux *que*, dans *que ce serait* et dans *que de parler*.

5. Traduisez : *Corin.*—And how do you like this shepherd's life, Master Touchstone ?

Touch. Truly, Shepherd, in respect of itself, it is a good life ; but in respect that it is a shepherd's life, it is naught. In respect that it is solitary, I like it very well, but in respect that it is private, it is a very vile life. Now, in respect it is in the fields, it pleaseth me well ; but in respect it is not in the court, it is tedious. Hast any philosophy in thee, shepherd ?

Cor. No more but that I know the more one sickens the worse at ease he is ; and that he that wants money, means and content, is without three good friends ; that the property of rain is to wet and fire to burn ; that good pasture makes fat sheep, and that a great cause of the night is lack of the sun. *As you like it*, Scene XII.

6. Comparez le drame du dix-septième siècle avec le drame sous la restauration.

a. Sous le point de vue des caractères ;

b. Sous le point de vue des règles de l'art dramatique ;

c. Sous le point de vue de l'influence que les deux écoles exerçaient sur les contemporains.

Quel nom pourra-t-on donner à l'école dramatique du dix-septième siècle et lequel à celle-ci ? Nommez les principaux poëtes dramatiques des deux écoles et les pièces par lesquelles ils se sont distingués.

7. Dans quel genre de littérature Casimir Delavigne, Alfred de Vigny, Prosper Mérimée, Augustin Thierry, Barante, St.-Marc Girardin se sont-ils illustrés ? Nommez un de leurs ouvrages.

8. Qui est-ce qui a écrit "*la Nuit de Mai*," "*le Meunier sans souci*, "*le Lac*," "*le Roi de Rome*," "*la Jeune captive*," *le Livre des orateurs ?*

ADDITIONAL DEPARTMENT.

MONDAY, 21ST :—MORNING, 9 TO 12.

Examiner, ...P. J. DAREY, M.A., B.C.L.

1. Faites une analyse complète du *Misanthrope.*

2. Quelle est la morale de cette comédie ?

3. Donnez un court aperçu biographique d'Emile Souvestre.

4. A quelle date de l'année correspond le premier et le dernier chapitre du *Philosophe sous les toits ?* Donnez un court résumé de ce chapitre-ci.

5. Traduisez en anglais ces expressions prises du *Philosophe sous les toits :* des retours de vertige ; les orties de vieillesse ; revenu seulement depuis quelques instants à la conscience de ce qui m'entoure ; avez-vous une comptabilité ouverte pour votre tempéramment comme pour votre industrie ; l'estomac s'alanguit ; vous vous êtes insensiblement entouré de mille précautions douillettes ; Eh bien ! on a donc retrouvé sa *boule ;* je t'aimerai abri de passage.

6. Comment expliquez-vous l'ortographe de *grand'mère, grand'messe ?*

7. Qu'est-ce qu'on appelle accent tonique en français. Où se trouve-t-il toujours ?

8. Comment se fait-il qu'*amour* a les deux genres ?

9. Donnez les étymologies et les transformations *je, en, y.*

10. Traduisez en français :

Now, cried I "the sum of my miseries is made up, nor is it in the power of anything on earth to give me another pang. What! not one left! not to leave me one! the monster! That child that was next to my heart! She had the beauty of an angel, and almost the wisdom of an angel. But support that woman nor let her fall. Not to leave me one" !—"Alas, my husband!" said my wife, "you seem to want comfort even more than I. Our distresses are great; but I could bear this, and more, if I saw you but easy. They may take away my children, and all the world, if they leave but you."

The Vicar of Wakefield.

HONOUR EXAMINATIONS, 1884.

MONDAY, APRIL 7TH:—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M.A., B.C.L.

1. Faites une analyse complète de *Cinna* et des *Plaideurs*.

2. Quand naquit Montaigne? Où mourut-il? Quels sont ses principaux ouvrages?

3. Qu'est-ce que les *Essais?* Qu'est-ce qui fait le charme des *Essais?* En quoi consiste l'intérêt des *Essais?* En quoi le langage des *Essais* est-il intéressant?

4 Qu'est-ce que Montaigne dit de l'amitié? Donnez un résumé de son chapitre sur l'amitié?

5. Quel est le caractère des maximes de LaRochefoucauld? Citez-en quelques-unes?

6. Que remarquez-vous sur l'usage de *mien, tien, sien,* dans le moyen-âge et dans Montaigne?

7. Pour quels mots s'employait *de quoi* au moyen-âge? Citez un exemple.

8. Quelle est l'étymologie de *aucun?* Quelle signification avait-il au moyen-âge? Lui donne-t-on encore cette signification?

9. De combien de verbes le verbe français *être* est-il composé? Expliquez votre réponse.

10. Expliquez l'orthographe du futur en français?

11. Traduisez en français moderne:

Par son Seignur deit hom susfrir granz mals,
Et endurer e forz freize e granz chalz;
S'en deit hom perdre del sanc e de la chair.
Fier de ta lance e jo de Durandal,
Ma bone espee que li reis me dunat!
Si jo i moere, dire poet ki l'avera:
I ceste espee fut à noble vassal.

Chanson de Roland.

12. Li baron sont si lié, que il nel pooient croire que ce soit voirs. Et li Venisien commencent à envoier chevaus et palefroiz à l'ost en batiaus de cels que ils avoient gaaigniez dedenz la ville. Et quant l'empereres Alexis vit que il furent ensi entré dedenz la ville, si commence ses genz à envoier à si grand faison vers els. Et quant cil virent que il ne les porroient

soffrir, mistrent le feu entre ils et les Grex. Et li vent venoit devers nos gens. Et li feus si commence si grant à naistre, que li grex ne pooient veoir nos genz. Ensi se retraistrent à lors tors que ils avaient laissies et conquises.

Villehardouin. De la conqueste de Constantinople.

13. Aussi comme l'aube du jour aparait nous nous atirames de touz poins; et quant nous feusmes atirés, nous alames au flum, et furent nos chevaus à nou. Quant nous feusmes alés jusques en mi le flum, si trouvames terre, à où nos chevaus pristent pié; et sur la rive du flum trouvames bien trois cens Sarrazins touz montés sur leur chevaus.

Joinville.

14. Apres le departement du Roy de France et de son ost du mont de Sangastes, ceux de Calais veirent bien que leur secours estait failli; dont ils estoynt en si grand douleur et detresse, que le plus fort se pouvoit á peine soutenir.

Froissart.

15. Que chaut-il quand ce soit puisqu'elle est inévitable? Je vay bien jusques à ce second poinct avecques mon peintre; mais je demeura court en l'autre et meilleure partie, car ma suffisance ne va pas si avant que d'oser entreprendre un tableau riche, poly, et formé selon l'art.

Montaigne.

GERMAN.

FIRST YEAR.

FRIDAY, APRIL 18TH:—MORNING, 9 TO 12.30.

Examiner,.....C. F. A. MARKGRAF, M.A.

1. Translate into English:—

(A) ....."Siehst du denn nicht den Sirius leuchten? Er stehet in dieser Jahreszeit g'rade über unserm Dorfe. Wohlan, wir müssen uns zur Rechten wenden, dann werden wir noch heute die Heimath erreichen." Da staunte Emil und sagte: "Das hätte ich doch nimmer gedacht, daß wir unsern Weg am Himmel finden würden!"

Und der Vater antwortete: "Der Wandersmann kann der Sterne nicht entbehren in der dunkeln Nacht, sie sind ihm die Führer seines Weges und leiten ihn, wann er sich verirret hat, wieder zu dem gesuchten Ziele. Ich will dich die Zahl und den Gang dieser himmlischen Lichter lehren, daß du sicher einhergehest auf deinen Pfaden, wann ich nicht mehr dein Führer bin. Und bald will ich dir noch andere Sterne zeigen; du kannst sie nicht sehen mit dem Auge des Leibes, aber im Geiste sollst du sie schauen, und sie sollen dich sicher hinüberleiten zur himmlischen Heimath."

I. H. C. Nonne, die leuchtenden Sterne.

(B) Sprache, schön und wunderbar,
Ach, wie klingest du so klar!
Will noch tiefer mich vertiefen
In den Reichthum, in die Pracht;
Ist mir's doch, als ob mich riefen
Väter aus des Grabes Nacht.

Klinge, klinge fort und fort,
Heldensprache, Liebeswort!
Steig' empor aus tiefen Grüften,
Längst verscholl'nes, altes Lied!
Leb' aufs Neu in heil'gen Schriften,
Daß dir jedes Herz erglüht!

Ueberall weht Gottes Hauch,
Heilig ist wohl mancher Brauch;
Aber soll ich beten, danken,
Geb' ich meine Liebe kund;
Meine seligsten Gedanken
Sprech' ich, wie der Mutter Mund.

von Schenkendorf, die Muttersprache.

2. (See Ext. A and B) (*a*) State the cases in the following expressions :—in dieſer Jahreszeit ; über unſerm Dorfe ; am Himmel ; in der dunkeln Nacht ; dieſer himmliſchen Lichter ; auf deinen Pfaden ; mit dem Auge ; im Geiſte ; zur himmliſchen Heimath ; in den Reichthum ; aus des Grabes Nacht ; in heil'gen Schriften.—Explain the forms am, im, zur. (*b*) Give the Nom. Plural of :—unſern Weg ; der Wandersmann ; dein Führer ; dem Auge ; Geiſte ; den Reichthum ; Nacht ; Heldenſprache ; Liebeswort ; verſchollenes, altes Lied.

3 Decline in both numbers :—the greatest king ; that young woman ; *some* black and grey cloth.

4. Give the *corresponding* English idioms of the following sentences :—Dieſe Seide koſtet zwei Thaler die Elle. Laſſen Sie ihn holen. Wir haben ſechs und ein halbes Pfund Kirſchen gekauft. Wollen Sie noch eine Taſſe Thee? Ich danke. Er iſt vor fünf Vierteljahren abgereiſ't. Seit einigen Monaten wohne ich bei meinen Eltern.

5. (*a*) When are *ordinal* numbers used as substantives and written with a capital letter. Give one or two examples. (*b*) Give the Nom Dat. and Acc. Sing. and Plu. of the *personal* pronouns. (*c*) Which words may be used as substantives in German, and in what gender ? Give examples.

6. Translate :—(*a*) What o'clock is it ? Half past one ; a quarter to ten ; a quarter past five ; ten minutes to eleven ; at six o'clock. (*b*) Do you go to Italy ? They come from Berlin. Go home ! Does he come from the garden or from the field ? I am going to the square, to my friends, to the concert.

7. (*a*) Parse the following verbs, giving their meaning and Present Infinitives :—abgenommen, weißt, möget, abgeſchrieben, darfſt, wartetet, verdorben, könnt, weggeſetzt, vorgeleſen. (*b*) Conjugate „wiederſagen", giving the 2nd Sing. and 1st Plural of all the tenses of the Indicative

8. Translate into German :—

We have many old oaks and fir-trees in our forests. The source of this river is on a high mountain. The colour of the rose is not so bright, but more beautiful than the colours of the tulip. Round or oval tables are much prettier than square *ones*. That rich lady has *given* (made) several handsome presents to her faithful servants. They had never before seen that. The sky is covered with dark clouds. One (pron.) likes to speak of good old times. We visited the fine cathedral of Cologne on (auf. Dat.) our journey through Germany. Goethe (has) died in the year 1833 (in letters).

INTERMEDIATE EXAMINATION.

WEDNESDAY, APRIL 16TH :—MORNING, 9 TO 12.30.

Examiner,.....C. F. A. MARKGRAF, M.A.

Translate into English :—

(A) Nun war der Braune gefangen.
Haupt und Füße geklemmt; es half kein Schelten, noch Schmeicheln.
Vollauf hatte der Braune zu thun, so stark er und kühn war,
Und so hielt der Neffe mit List den Oheim gefangen.
Heulend plärrte der Bär, und mit den hintersten Füßen
Scharrt' er grimmig und lärmte so sehr, daß Rüsteviel aufsprang.
Was es wäre, dachte der Meister, und brachte sein Beil mit,
Daß man bewaffnet ihn fände, wenn Jemand zu schaden gedächte.
Braun befand sich indeß in großen Aengsten; die Spalte
Klemmt' ihn gewaltig, er zog und zerrte brüllend vor Schmerzen.
Aber mit alle der Pein war nichts gewonnen; er glaubte
Nimmer von dannen zu kommen; so meint' auch Reineke freudig.
Als er Rüsteviel sah von ferne schreiten, da rief er:
„Braun, wie steht es? Mäßiget euch und schonet des Honigs!
Sagt, wie schmeckt es? Rüsteviel kommt und will euch bewirthen;
Nach der Mahlzeit bringt er ein Schlückchen, es mag euch bekommen!"
Da ging Reineke wieder nach Malepartus, der Veste.

Goethe, Reineke Fuchs.

(B) Erschrocken blickt der Graf umher;
Er stößt ins Horn, es tönet nicht;
Er ruft und hört sich selbst nicht mehr;
Der Schwung der Peitsche sauset nicht;
Er sporut sein Roß in beide Seiten
Und kann nicht vor- nicht rückwärts reiten.

Drauf wird es düster um ihn her,
Und immer düstrer wie ein Grab.
Dumpf rauscht es wie ein fernes Meer.
Hoch über seinem Haupt herab
Ruft furchtbar, mit Gewittergrimme,
Dies Urthel eine Donnerstimme:

„Du Wüthrich, teuflischer Natur,
Frech gegen Gott und Mensch und Thier!
Das Ach und Weh der Kreatur
Und deine Missethat an ihr
Hat laut dich vor Gericht gefodert,
Wo hoch der Rache Fackel lodert.

Fleuch, Unhold, fleuch, und werde ietzt.
Von nun an bis in Ewigkeit,
Von Höll' und Teufel selbst gehetzt!
Zum Schreck' der Fürsten jeder Zeit,
Die, um verruchter Lust zu frohnen,
Nicht Schöpfer noch Geschöpf verschonen!''

Bürger, der wilde Jäger.

2. (*a*) When has the Apologue of Reynard the Fox originally been written, and in what German dialect? Which are the best translations of it in High German?—Narrate briefly the incidents which brought about the denouement treated of in the extract from which the above fragment is taken. (*b*) State what you know about the origin of the legend of the 'wild huntsman' and of the 'raging host' (des wüthenden Heeres).

3 (*a*) Parse the following verbs, and give the other *irregular* parts of each:—half, hielt, auffprang, wäre, dachte, brachte mit, fände, gedächte, zog, rief, mag, ging. (*b*) War gefangen; war gewonnen. Show the difference in meaning between these forms and wurde gefangen, wurde gewonnen. (*c*) Explain fleuch werde, gehetzt;—and state rules, with exceptions, for the formation of the Imperative in German.

4. Decline in the Singular:—a learned *man*; the old clergyman;—and in the Plural:—the rich and the poor; strangers and acquaintances.

5. When do possessive pronouns remain unchanged? When are they declined like adjectives? Give examples.

6. (*a*) Mention *six* compound verbs which are *separable* or *inseparable* according to the sense in which they are used. Add short examples. (*b*) Give the 2nd Sing. and 1st Plu. of the Present, Imperfect, Pluperfect and Second Future *active*, in both the Indicative and Subjunctive, of:—ſtehen, ausſehen, ſich vornehmen. (*c*) Conjugate „anklagen", giving the 3rd Sing. and 2nd Plural of all the moods and tenses *passive*.

7. Translate, and explain the construction of the following sentences:—Deshalb kam er zu uns. Was thäteſt du, wenn das geſchähe? Man fragte mich, woher ich das wiſſe. Das Jauchzen vieler Tauſende erfüllte die Luft.

8. Give the meaning and explain the use of the following prepositions:—zufolge, trotz, zuwider, halben um—willen, gegenüber, ungeachtet zunächſt.

9. Translate into German :—

There are many large towns within the boundaries of that realm. At the foot of fire-spitting Vesuvius lies charming Naples. The inventor of (the) watches was a man from Nuremberg. One finds skeletons of immense antediluvian animals in the highest north, as well as shells (Muſchel f.) on the tops (Spitze, f.) of the highest mountains (Gebirge n.). Along the border of the wood there are many blackberry-bushes which are very often visited by the village-children. Francis' uncle and Clara's and Agnes' daughters came to meet us outside the city-gate. We are very sorry to hear that your friend's only son had died. Every one warned him of the great danger and told him *that* he would gain nothing by it.

EXAMINATION FOR LANSDOWNE MEDAL in MODERN LANGUAGES AND HISTORY.

SPANISH.

Examiner,.....W. H. Vander Smissen, M.A.

I. Grammar.

1. Give the conjunctive forms of the personal pronouns, and state when they are used.

2. Distinguish between *haber* and *tener*, *ser* and *estar*, with examples; and give the pres. and pret. def. indic. of each in full.

3. What changes do the vowels *e* and *o* regularly undergo in Spanish verbs, and when do these changes take place?

4. Give the gerund, past part., pres. indic. and imperative (in full); the 1st pers. sing. of the imperf., pret. def., plupf. and fut. indic., and of the pres., imperf., and fut. subj. of the verb *ir*.

5. Define the use of the conditional in Spanish.

6. Give examples of peculiar Spanish idioms in the use of the gerund and infin.

7. Distinguish between *para* and *por*, with examples.

II. Translation.

Translate into English:—

Cipriano.—La hermosa cuna temprana
Del infante sol que enjuga
Lágrimas cuando madruga,
Vestido de nieve y grana;
La verde prision rufana
De la rosa cuando avisa
Que ya sus jardines pisa
Abril, y entre mansos hielos
Al alba es llanto en los cielos,
Lo que es en los campos risa;
El detenido arroyuelo,
Que el murmurar mas suave
Aun entre dientes no sabe,
Porque se los prende el hielo;
El clavel, que en breve cielo
Es estrella de coral;

El ave, que liberal
Vestir, matices presuma,
Veloz citara de pluma
Al órgano de cristal;
El risco que al sol engaña,
Si á derretirle se atreve,
Pues gastándole la nieve,
No le gasta la Montaña;
El laurel que el pié se baña
Con la nieve que atropella,
Y verde Narciso della,
Burla sin temer desmayos,
En esta parte los rayos,
Y los hielos en aquella;
Al fin, cuna, grana, niève,
Campo, sol, arroyo, rosa,
Ave que canta amorosa,
Risa que aljófares llueve,
Clavel que cristales bebe,
Peñasco sin deshacer,
Y laurel que sale á ver
Si hay rayos que le coronen,
Son las partes que componen
A esta divina mujer.
Estoy tan ciego y perdido,
Porque mi pena te asombre,
Que por parecer á otro hombre,
Me engañé con el vestido.
Mis estudios di al olvido
Como al vulgo mi opinion,
El discurso á mi pasion,
A mi llanto el sentimiento,
Mis esperanzas al viento,
Y al desprecio mi razon.
Dije (y haré lo que dije)
Que ofreciera liberal
El alma á un genio infernal
(De aqui mi pasion colige),
Porque este amor que mi aflige
Premiase con merecella;
Pero es vana mi querella,
Tanto que presumo que es
El alma corto interes,
Pues no me la dan por ella.

CALDERON, *El Magico Prodigioso*, Jorn. II., Esc. xviii

1. Parse and conjugate the following verbs, giving the principal parts : *vestido, detenido, prende, bebe, componen, sale, di, ofreciera, colige.*

2. *Que enjuga.* Distinguish between the pronouns *que* and *quien.*

3. *A esta divina mujer.* Explain the function of the prep. *á* here.

4. *Merecella.* Parse and analyze.

5. *El alma.* Why *el* before a fem. subst.?

III. Translation.

Translate into Spanish :—

The lion having died, all the birds and beasts congregated at his cave to condole with the widowed queen, who made her lamentations and cries (*grito*) resound in the mountains and woods (*bosque*). After the usual (*acostumbrado*) compliments, they all proceeded to the election of a king, and the crown of the defunct monarch was placed (*colocar*) in the midst of the assembly. His heir-apparent was much too (*demasiado*) young and feeble (*endeble*) to obtain the royal dignity, so that (*á la que*) the animals stronger than he presented (*poner*, pret. def.) their claim. "Suffer (*dejar*) me to grow a little," said "his highness," and then you will find out (*esperimentar*) that I can fill the throne, and in (*con*) time make my subjects (*subdito*) happy.

IV.

Translate into English :—

CLARIN.—En una encantada torre,
Por lo que sé, vivo preso :
Qué me harán por lo que ignoro,
Si por lo que sé me han muerto ?
Que un hombre con tanta hambre
Viniese á morir viviendo !
Lástima tengode mi ;
Todos dirán : "Bien lo creo ; "
Y bien se puede creer,
Pues, para mi, este silencio
No conforma con el nombre
Clarin ; y callar no puedo.
Quien me hace compañia
Aqui, si á decirlo acierto,
Son arañas y ratones.
Miren, qué dulces jilgueros !
De los sueños desta noche,
La triste cabeza tengo
Llena de mil chirimias,

De trompetas y embelecos,
De procesiones, de cruces,
De disciplinantes; y estos,
Unos suben, otros bajan,
Unos se desmayan viendo
La sangre que llevan otros;
Mas yo, la verdad diciendo,
De no comer me desmayo;
Que en una prision me veo,
Donde ya todos los dias
En el filósofo leo
Nicomédes, y las noches
En el concilio *Niceno*.
Si llaman santo al callar,
Como en calendario nuevo,
San segreto es para mi,
Pues le ayuno y no le huelgo;
Aunque está bien merecido
El castigo que padezco,
Pues callé, siendo criado,
Que es el mayor sacrilegio.
(*Rindo de cajas y clarines, y voces dentro*).
CALDERON, La vida es Sueño, Jorn. III., esc. i.

1. Parse and conjugate, giving chief parts: *sé, harán, viniese, tengo, dirán, creo, puede, suben, comer, veo, leo, padezco.*

2. Explain the following phrases: *por lo que sé; disciplinantes otros Nicomédes; concilio Niceno; como en calenderio nuevo.*

3. Criticise Calderon's diction, plot and delineation of motives and character, as exhibited in these two plays.

4. Give a brief outline of the plot of either play, in Spanish, if you can (as an exercise in composition) otherwise in English.

V. Literature.

1. Give a brief outline of the life of Cervantes, naming and characterizing his principal works.

2. What is meant by "cultismo," and to what was it opposed? Illustrate by reference to the works of Góngora.

3. Characterise the poetry of Fernando de Herrera and of Jauregui.

4. What were the principal sources of Spanish ballad poetry? Mention some of its favorite themes, and give particulars as to the same.

THIRD YEAR.

HEBREW.

THURSDAY, APRIL 17TH:—MORNING, 9 TO 12.

Examiners, ... { REV. PROF. D. COUSSIRAT, B.A., B.D.
REV. JAS. AWDE, B.A.

1. Translate and parse: יִרְאַת יְהוָה אַלְמֵד אֶתְכֶם
Explain the pointing of יְהוָה Render into Hebrew: To the Lord. What is the meaning of לָמַד in Kal and in Piel?

2. Translate: אָנֹכִי עָמַדְתִּי בְהָר. אַשְׁרֵי אָדָם שֹׁמֵעַ לִי Analyze the verbs. Translate into Greek and Latin אָדָם and אִישׁ Explain the use of Pattach furtive under שֹׁמֵעַ Render into Hebrew: To him, to you (masc. plural), to them (fem.). Explain the absence of dagesh lene in the ב of בְּהָר Conjugate the preterite Hiphil of עָמַד

3. Translate: סְבָבוּנִי כְּלָבִים רַבִּים
Explain the pointing of the verb. Write out the contracted form of the same tense and person. Give a paradigm of future Poel of סָבַב

4. Translate: יֹאבַד יוֹם אִוָּלֵד בּוֹ Parse the verbs. Give the plural and dual of יוֹם Explain the change of ֵ— into ֶ— under the ל of the second verb.

5. Translate: יְיָ נָתַן וַיְיָ לָקַח State the peculiarities of these two verbs. Render into Hebrew: My giving; I have given; He has been taken. Explain the pointing of וַ in וַיְיָ.

6. Translate: וְלֹא קָם נָבִיא עוֹד כְּמֹשֶׁה
Give the translation of לֹא and אַל in Latin and in Greek. Give a paradigm of future Kal of קוּם.

7. Translate: וַיִּקְרָא בְקוֹל גָּדוֹל יְהוּדִית וַיֹּאמֶר

Parse the verbs. Explain the use of וְ conversive.

8. Point out the accented syllables of the verbs and nouns in the two preceding sentences (questions 6 and 7), and state the rules respecting the position of the accents on these words.

9. Conjugate the future Kal of הָיָה

10. Translate into Hebrew: And she said: The glory is departed from Israel: because the ark of God has been taken.—The stone which the builders have despised is become the head of the corner.

SECOND YEAR.

WEDNESDAY, APRIL 16TH:—MORNING, 9 TO 12.

Examiners,..... ..... { REV. PROF. D. COUSSIRAT, B.A., B.D.
REV. JAS. AWDE, B.A.

1. Translate (1) Genesis II. 1-6; (2) id. III. 9-14; (3) id. III. 20-24.

2. Analyze (1) the verbs of chap. II, verse 8; (2) and of chap. III, verse 23; (3) the nouns of chapter II, verse 23.

3. How do the Vulgate and LXX translate גַּן. אִשָּׁה and שׁוּף?

4. Write out the Latin, Greek and English words similar in form and meaning to שֵׁם. אָב. קוֹל. שִׁית. כְּתֹנֶת.

5. Give a paradigm of (1) Kal imper. נָגַשׁ. (2) Niphal pret. יָשַׁב. (3) Hiphil fut. גָּלָה.

6. Show that the translation *ipsa conteret caput tuum* of the Vulgate (Genesis III, 15) is incorrect.

7. Does עֹלָם mean endless duration in Genesis III, 22?

8. Translate into Hebrew: The man whom he had formed. They have surrounded the city.—The Lord has given us wisdom. Thus saith the Lord: Blessed is the man who listens to me!

9. Translate into English וּבְמוֹשַׁב לֵצִים לֹא יָשָׁב׃ וְזֹרֹעַ יְיָ עַל־מִי נִגְלָתָה׃ Point out the accented syllables of the nouns and verbs in these sentences.

10. Translate the masoretic note which is found at the end of the book of Genesis, and point the following words: סכום. סימן. מניין. וסדריו. וחציו. דספר.

THIRD YEAR.

MONDAY, APRIL 21 ST:—MORNING, 9 TO 12.

Examiners,..... { REV. PROF. D. COUSSIRAT, B.A., B.
REV. JAS. AWDE, B.A.

1. Translate (1) Isaiah lv. 4-9; (2) Psalm xlii. 2-8; (3) Psalm li. 11-17.

2. Analyze (1) the verbs of Isaiah lv. 3; (2) the nouns of Psalm i. 3; (3) the irregular verbs of Psalm xlii. 9.

3. What is the Greek translation of חַסְדֵי דָוִד (Isaiah, lv. 3), as it is found in Acts xiii. 34?

4. Give the literal translation in Latin and Irish of פְּצַח רִנָּה (Isaiah, lv. 12).

5. Write out the full form of אֲדַדֵּם (Psalm xlii. 5.) and account for the presence of the two dageshes.

6. What is the correct rendering of תְּהוֹם (Id. verse 8).

7. Explain the pointing of הֶרְבֵּה (Psalm li. 4.)

8. Is תָּגֵלְנָה a Kal or a Hiphil conjugation?

9. Point and translate the masoretic note which is found at the end of the book of Isaiah.

10. Translate into Hebrew: God will create in us a clean heart by his Holy Spirit, and will teach us his ways, for he does not despise a broken and a contrite heart. To him be glory and praise for ever!

THE NEIL STEWART PRIZE.

GCAMMAR.

THURSDAY, APRIL 17TH:—MORNING, 9 TO 12.

Examiners, ... { REV. PROF. D. COUSSIRAT, B.A., B.D.
REV. JAS. AWDE, B.A.

1. Write the pronunciation of חַי. גּוֹ. וָו.

יו — (Suffix). בָּתִּים. חָנֵנִי. לָמָּה. שָׁת־לִי. גּוֹי.

2. Point out the accented syllables in the following words and state rules: חַיִת. בֹּקֶר. לַיְלָה.

דְּבָרִי. וַיִּקְטֹל. וַיּוֹכַח. סַבָּה. מֹשֶׁה. בַּרְזֶל.

3. In what cases are vowels unchangeable? Give examples.

4. Point out the change which the ת of the syllable הִתְ of the Hithpael suffers before ד. ט. ת.

5. Give a paradigm of (1) Hiphil pret. שָׁלַח.

(2) Kal inf. נָגַשׁ. (3) Niphal pret. יָשַׁב.

(4) Hiph. fut. קוּם. (5) Piel fut. גָּלָה.

6. Append a light and grave suffixes to the sing. and plur. of עוֹלָם and שָׁנָה.

7. Translate into Hebrew: Fifty cities.—In the first day God created the light.—We have three sons and three daughters.

8. State the rules respecting the prepositions מִן. בְּ. כְּ. לְ.

9. Explain the pointing of וְ in this expression: תֹהוּ וָבֹהוּ.

THE NEIL STEWART PRIZE.

TRANSLATIONS.

MONDAY, APRIL 21ST:—MORNING, 9 TO 12.

Examiners,..... { REV. PROF. D. COUSSIRAT, B.A., B.D.
REV. JAS. AWDE, B.A.

1. Translate (1) Genesis viii. 15-22; (2) Habakkuk ii. 12-18; (3) Psalm iv.

2. Analyze (1) Psalm iv. 2; (2) the irregular verbs of Habak. iii. 6; (3) the verbs and particles of Genesis ix. 27.

3. Point and translate the masoretic note which is found at the end of the book of Psalms.

4. Explain the meaning of בְּרֵאשִׁית in Genesis i. 1. and point out its relation to the following verses, according to several translators.

5. How do you account for the plural of נַעֲשֶׂה in Genesis i. 26?

6. Point out the probable meaning of לַמְנַצֵּחַ. הַנְּחִילוֹת. מִזְמוֹר. בִּנְגִינוֹת.

7. What is the correct translation of חֲמָתְךָ in Habak. ii. 15?

8. Translate into Hebrew: The soul of the proud is not right within him, but the just by his faith shall live.—Woe to him that procureth wicked gain for his house!—

CHEMISTRY AND NATURAL SCIENCES.

FIRST YEAR.

CHEMISTRY.

MONDAY, APRIL 7TH:—MORNING, 9 TO 12.

Examiner, ...B. J. HARRINGTON, Ph.D., F.G.S.

1. Give the formulæ of the anhydrides and acids of Phosphorus.

2. What are crystals? In what ways may they be obtained? Explain their classification into systems, and give the characters of one system?

3. How is Coal Gas usually purified? Name its principal constituents, distinguishing between luminants and diluents.

4. How is Olefiant Gas prepared? Give its constitutional formula and the general formula of the series to which it belongs?

5. Give the composition and properties of Starch. What bodies are isomeric with it?

6. What is Wood-Spirit? Give its formula, and distinguish between it and Methylated Spirit. Into what acid is it converted by oxydation?

7. Point out the advantages of using vacuum-pans in the manufacture of Sugar?

8. Describe Reinsch's test for the detection of Arsenic?

9. Give the composition of the principal ores of Iron. How is the metal obtained from them?

10. What are salts, and how are they formed?

SECOND YEAR.

BOTANY.

FRIDAY, APRIL 18TH:—MORNING, 9 TO 12.

Examiner,.....D. P. PENHALLOW, B. Sc.

1. The ovule: its morphological character, structure, relation of parts and function.

2. Give those Chemical elements which enter into the composition of the plant; state which are the most important and from what source or sources they are obtained.

3. How is food taken up by the plant, and in what forms?

4. Describe the process by which plant food is rendered available for direct nutrition, and state what conditions are essential to its promotion.

5. Describe the characteristic physiological changes—and mention their products—which occur in colorless plants, and in plants transferred from light to darkness.

6. Fruit.

7. Classification.

8. Describe Gymnosperms as a class, and define their systematic position, giving reasons.

9. *Ericaceae:* Give the distribution, general habit of growth, and useful or injurious qualities. Examples.

10. *Liliaceæ:* Give the proper systematic position, general habit of growth, distribution and value.

THIRD YEAR (*Additional Department*).

THEORETICAL CHEMISTRY.

TUESDAY, APRIL 22ND:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. Discuss the value of determinations of Specific Heat in ascertaining Atomic and Molecular weights.

2. What is Quantivalence? How is it determined in the case of elements which form no compound with Hydrogen? In cases of variable Quantivalence what value is selected?

3. What do you understand by the Haloid Derivatives of the Hydrocarbons? Give examples.

4. Explain the constitution of the Primary Alcohols. What takes place when they are acted upon by Metallic Potassium or Sodium?

5. Explain by graphic formulæ the supposed differences in the constitution of Ortho-, Meta- and Para-xylol.

6. What are Alcoholates? Give examples.

7. CH_2OH $\quad$ COH $\quad$ $CO.OH$

Explain these formulæ. For what substances do they stand?

8. What are Amines? Distinguish between Monamines and Diamines, and between primary, secondary and tertiary Amines. What is the formula of Diethylenediethyldiamine?

9. What changes are indicated by each of the following equations:

$$2\,CH_3I + Zn_2 = (CH_3)_2\,Zn + ZnI_2$$

$$C_3H_7I + KOH = KI + H_2O + C_3H_6$$

SECOND YEAR MINING AND THIRD YEAR ARTS. (*Add. Dept.*).

CHEMISTRY.

MONDAY, APRIL 7TH:—MORNING, 9 TO 11.

Examiner, ...B. J. HARRINGTON, PH. D., F.G.S.

1. Describe the preparation of Nitric Acid. By what tests may this acid be detected (*a*) when free, and (*b*) when combined?

2. How would you detect the presence of Iron and Zinc in a sample of Blue Vitriol?

3. Name the principal acids which give a precipitate (*a*) with $BaCl_2$ (*b*) with $AgNO_3$.

4. A solution contains 0.75 grm. of Calcium Chloride—How much Ammonium Oxalate must be added in order to precipitate the whole of the Calcium in the form of Oxalate?

5. Explain the following changes and the circumstances under which they take place:

$$Fe_2Cl_6 + H_2S = 2\,FeCl_2 + 2\,HCl + S.$$

$$2\,H_2CrO_4 + 6\,HCl + 3\,H_2S = Cr_2Cl_6 + 8\,H_2O + 3\,S.$$

6. Describe the separation of Zinc from Aluminum, of Barium from Strontium, and of Magnesium from Calcium.

7. Explain the use of the metals Iron, Copper, Zinc and Platinum in the detection of other metals.

8. A solution contains Cadmium, Tin and Arsenic. Describe the detection of these metals.

THIRD YEAR ARTS AND SECOND YEAR APPLIED SCIENCE.

MINERALOGY.

WEDNESDAY, APRIL 16TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, PH.D., F.G.S.

1. Give a sketch of the course to be followed in the determination of a mineral which is unknown to you.

2. Describe the Jolly spring balance, and explain its use in taking specific gravities.

3. Give the blowpipe characters of Calcite, Barite, Stibnite, Arsenopyrite and Pyrolusite.

4. Enumerate the principal Ores of Copper, and describe two of them.

5. Give in tabular form the names, composition, and deportment before the blowpipe, of the principal Zeolites.

6. What takes place when the powder of each of the following minerals is heated with hydrochloric acid:—Sphalerite, Pyrolusite, Apatite, Natrolite, Stilbite?

7. To what species do the following substances belong:—Rubellite Chiastolite, Aquamarine, Pyrope, Ruby? Describe any two of the species.

8. How would you distinguish Argentite from Galena, Turquois from Malachite, Cinnabar from Hematite, Topaz from Tourmaline?

9. Name and describe each of the specimens on the table.

B. A. ORDINARY EXAMINATION, AND THIRD YEAR IN APPLIED SCIENCE.

GEOLOGY.

THURSDAY, APRIL 10TH:—MORNING, 9 TO 12.

Examiner, ...B. J. HARRINGTON, PH.D., F.G.S.

1. What are the characteristics of the earliest known fishes? In what rocks do they occur? What are their modern representatives?

2. In what rocks do we first find (1) Lycopods, (2) Calamites, (3) Cycads, (4) Palms, (5) Insects, (6) Land snails, (7) Scorpions, (8) True Reptiles?

3. What are the subdivisions of the Carboniferous system as developed in Nova Scotia? Characterise each briefly. In addition to coal what substances of economic value are found in the Carboniferous?

4. What seem to have been the conditions requisite for the formation of coal, and at what geological horizons have workable seams been found?

5. What is the horizon of the Oriskany sandstone, the Corniferous limestone, the Zechstein, the Stonesfield slates, the London clay, the Nummulitic limestone, the Leda clay?

6. Give the subdivisions of the Trias as occurring in Europe, and their lithological characteristics.

7. State what you know as to the affinities and geological relations of any five of the following genera:—*Dadoxylon*, *Lepidodendron*, *Productus*, *Belemnites*, *Gryphæa*, *Hippurites*, *Brontozoum*, *Archæopteryx*, *Zeuglodon*, *Mastodon*.

8. To what causes have the foldings of the earth's crust been ascribed? At what periods have the greatest disturbances of the crust taken place?

9. What are the subdivisions of the Cretaceous system as developed in England? What the general characteristics of the life of the Cretaceous?

10. To what geological horizon do the oldest known remains of Man belong? Give a sketch of the more important discoveries of these remains.

11. State what you know as to the affinities and geological relations of the fossils placed before you.

B.A. ORDINARY EXAMINATION AND THIRD YEAR APPLIED SCIENCE.

LITHOLOGY.

THURSDAY, APRIL 10TH:—AFTERNOON, 2 TO 4.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. Explain the following terms:—Foliated, Laminated, Slaty, Vesicular, Amygdaloidal, Granitoid. In what rocks may these structures be best observed?

2. Distinguish between Simple and Compound rocks, Aqueous and Igneous rocks, Older and Younger eruptive rocks. Discuss the value of the last distinction.

3. What do you understand by Fluxion-structure? In what rocks is it well seen? What are Crystallites? Name the different kinds.

4. What is Greensand? What its origin? At what geological horizons does it occur?

5. From what geological formations in Canada have Sandstones and Limestones suitable for the purposes of construction been derived?

6. Give the characteristics and origin of Oolite, Travertin, Lœss, Conglomerate, Quartzite?

7. Of what minerals are the following rocks composed:—Diabase, Phonolite, Aplite, Norite? To what classes do these rocks belong?

8. Name the rocks usually classed as Metamorphic, and describe two of them?

9. Name and describe the rock specimens upon the table, pointing out the geological relations of each?

THIRD YEAR HONOURS IN NATURAL SCIENCE AND THIRD YEAR IN THE MINING AND CHEMISTRY COURSES.

MINERALOGY.

THURSDAY, APRIL 24TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, Ph.D., F.G.S.

1. Give the notation of Naumann and Dana for the faces of the Trigonal-tris-octahedron, the Tetrahexahedron, the Deltohedron, and the Pyritohedron.

2. Explain each of the following symbols:

$$\pm\left[\frac{m\,O\,n}{2}\right],\quad \pm\ \frac{m\,O}{2},\quad \pm\ m\,Rn,\quad m\,\breve{P}\infty,$$

$$m\,\bar{P}n,\quad m\,\grave{P}\infty,\quad \infty\,\bar{P}\,n.$$

3. Give expressions for the faces of Sphenoids of the first and second order and also of the Ditetragonal Pyramid.

4. Explain each of the following expressions:

$\frac{1}{2}(a:a:\infty\ a:m\,c)$. $\qquad a:\infty\ b:mc$

$\frac{1}{2}(a:na:pa:mc)$. $\qquad a:na:\infty\ c$.

5. Distinguish between contact and penetration Twins, and give the twinning planes of Fluorite, Aragonite, Orthoclase and Pyroxene.

6. What is Sonstadt's solution? How is it prepared? What is its maximum density? Explain its use in determining specific gravities of minerals.

7. Give the mineralogical names of the Hydrous Oxides of Iron found in nature. Describe each species briefly.

8. When the following minerals undergo alteration, into what substances are they most frequently converted:—Orthoclase, Chrysolite, Pyroxene, Spinel, Siderite, Pyrite, Chalcocite? Describe the alteration products briefly.

9. How would you distinguish Enstatite from Amphibole, Garnet from Zircon, Wollastonite from Wernerite, Prehnite from Chalcedony?

10. Give the pyrognostic characters of any five of the following minerals: Topaz, Cassiterite, Rutile, Tetrahedrite, Molybdenite, Pyrargyrite, Franklinite.

DETERMINATIVE MINERALOGY.

AFTERNOON, 2 TO 6.

This examination will be held in the Chemical Laboratory.

B. A. HONOURS IN NATURAL SCIENCE AND B. Ap. Sc. (*Mining and Chemistry Courses*).

MINERALOGY.

MONDAY, MARCH 31ST:—MORNING, 9 TO 12.

Examiner.....B. J. HARRINGTON, B.A., Ph D.

1 Enumerate the holohedral forms of the Orthorhombic system, giving the symbols of Naumann and Dana.

2. Into what groups may native metallic Oxides be divided? Describe a member of each group?

3. Point out some of the more important imperfections observable in the interior of many crystals.

4. Define a Bisilicate and name the more common Bisilicates.

5. Into what groups and sub-species may Garnet be divided? Give examples.

6. Give the composition and crystalline form of Millerite, Proustite, Brookite, Gœthite, Tridymite, Nephelite, Topaz and Cerussite.

7. How would you distinguish Wernerite from Wollastonite, Bronzite from Diallage, Stilbite from Heulandite, and Thomsonite from Natrolite?

8. State what you know concerning the modes of occurrence of the following minerals in nature: Menaccanite, Limonite, Chrysolite, Staurolite, Leucite.

9. To what mineral species do the following substances belong:—Amianthus, Bort, Cat's Eye, Flos-ferri, Ice Spar, Aquamarine, Jargon?

10. What are the blowpipe characters of Pyrargyrite, Pyromorphite, Apophyllite, Tourmaline, Titanite?

11. Name the minerals exhibited and give their characters as seen in the specimens?

B.A. HONOURS IN NATURAL SCIENCE AND B. Ap. Sc. (*Mining and Chemistry Courses.*)

GEOLOGY AND PALÆONTOLOGY (*In part*).

MONDAY, APRIL 7TH:—9 A.M. TO 12, AND 2 TO 5 P.M.

Examiner,.....B. J. HARRINGTON, PH.D., F.G.S.

1. Give the sub-divisions and distribution of the Cambrian system in Canada. Name also its most characteristic fossils.

2. Name the principal families of Trilobites, and characterize each briefly.

3. Give the general characteristics of the Brachiopoda, and state into what orders they may be divided. What are the distinctive characters and range in time of the following genera:—*Terebratula, Spirifer, Rhynchonella, Strophomena, Chonetes?*

4. Give the horizon of the Menevian group, the Llandeilo group, the Keweenian series, the Arisaig series, the Gaspé limestones. Describe the Arisaig series briefly.

5. What are the affinities of the following genera:—*Saccammina, Fenestella, Avicula, Conularia, Favosites, Eurypterus, Dendrerpeton, Sauropus?*

6. Point out the differences between the central and marginal areas of the Devonian on both sides of the Atlantic.

7. By what organic remains would you recognize the Calciferous, the Niagara, and the Corniferous formations?

8. What substances of economic value are derived from the Palæozoic rocks of Canada? Where and at what geological horizons do they occur

9. Give the general characteristics and distribution of the Permian system in Europe and America, pointing out its relationship to the formations immediately preceding and succeeding.

10. In what formations have the following organic remains been found: —*Cordaites Robbii*, *Bathyurus extans*, *Glyptocrinus decadactylus*, *Tentaculites irregularis*, *Phacops bufo*, *Platephemera antiqua*, *Terebratula sacculus*, *Fusulina cylindrica*.

11. Give an outline of the principal features of the Devonian and Carboniferous flora.

SPECIMENS.—Afternoon, 2 to 5.

Refer the specimens exhibited to their geological formations, stating also their zoological or botanical affinities.

B.A. HONOURS IN NATURAL SCIENCE AND B. Ap. Sc. (*Mining and Chemistry Courses*).

GEOLOGY AND PALÆONTOLOGY (*in part*).

TUESDAY, APRIL 22ND :—9 A.M. TO 12, AND 2 TO 4 P.M.

Eaaminer,.....B. J. HARRINGTON, PH.D., F.G.S.

1. Give a classification of the Reptilia. At what horizons do we first find representatives of each of the orders. What are the principal points of similarity between Reptiles and Birds?

2. Give a sketch of the leading characteristics of the flora and fauna of the Trias. Mention any genera which were introduced and any which died out in the Trias.

3. Into what orders and families may the Cephalopoda be divided? Characterise each briefly. Name also some of the principal genera and state what you know as to their range in time.

4. What are the geological horizons of the following beds: (*a*) Rhætic Beds, (*b*) Purbeck Beds, (*c*) Oxford Clay, (*d*) Mæstricht Beds, (*e*) Niobrara group, (*f*) Coralline Crag? Give the lithological characters and principal fossils of any three of these.

5. State what you know as to the affinities and geological relations of each of the following genera:—*Rhamphorhynchus*, *Dromatherium*, *Coryphodon*, *Beryx*, *Exogyra*, *Thecidium*, *Hesperornis*, *Turillites*.

6. What are the subdivisions of the Lias? What their lithological characteristics and more important fossils?

7. State what you know as to the distribution and life of the Cretaceous in America.

8. What are the subdivisions of the Eocene as occuring in England and France?

9. Characterise each of the following genera briefly:—*Icthyosaurus, Carcharodon, Dinoceras, Dinotherium, Nummulites, Terebrirostra.*

10. Give the subdivisions of the Pleistocene as developed in Canada What are its more characteristic fossils? Discuss the origin of the beds of the oldest division.

SPECIMENS.—Afternoon, 2 to 4.

Name the specimens on the table, referring them to their geological formations and giving their zoological or botanical affinities.

B.A. HONOURS IN NATURAL SCIENCE AND B. Ap. Sc. (*Mining and Chemistry Courses.*

LITHOLOGY.

THURSDAY, APRIL 24TH:—MORNING, 9 TO 12.

Examiner, ... B. J. HARRINGTON, B.A., Ph.D.

1. Explain the terms Pleochroism and Absorption as employed in the study of thin sections of minerals. How are these phenomena best observed with the microscope?

2. What are the principal types of rock-structure in Massive rocks as ascertained with the microscope?

3. State to what extent crystalline outline can be depended upon in distinguishing minerals in rock-sections. Give also the more important cases in which mineral cleavage is a useful distinctive character.

4. What are the optical characters of hexagonal and monoclinic minerals as exhibited when thin sections are examined with the polarization microscope?

5. How should a section of Augite be cut in order that an optic axis may be seen with the microscope?

6. Muscovite, Biotite and Hornblende are present in a rock-section. How would you distinguish them optically?

7. Show the importance in many cases of determining (*a*) the specific gravity of a rock, and (*b*) the proportion of Silica. What means have we of separating the constituents of fine-grained rocks?

8. Name the minerals which are important as rock constituents, and group them according to Lasaulx's classification.

9. What are the principal rocks which yield gelatinous Silica when their powder is treated with Hydrochloric Acid? Describe them briefly.

10. Liparite, Pitchstone, Diabase, Gabbro, Propylite, Granulite. Describe these rocks briefly, and state what you know as to their geological relations.

11. Devitrification, Ground-mass, Belonite, Opacite, Microfelsite. Explain each of these terms briefly.

ROCK SPECIMENS.

Name and describe each of the rock specimens on the table, stating what you know as to their geological relations.

B.A. HONOURS IN NATURAL SCIENCE AND B. Ap. Sc. (*Mining and Chemistry Courses*).

PRACTICAL GEOLOGY.

FRIDAY, APRIL 25TH :—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, Ph. D., F.G.S.

1. What requirements should be fulfilled by a good geological map? Give the conventional signs used to indicate the attitude of strata.

2. Discuss the value (*a*) of mineral characters, and (*b*) of organic remains in determining the relative geological position of rocks.

3. In what simple ways may the geologist often obtain a clue as to the character of rocks which are concealed by surface deposits?

4. A series of strata measure 2000 feet across their strike and have an inclination of 10°, what is their true thickness?

5. Point out the value of color in discriminating between rocks in the field.

6. How may the ages of eruptive rocks and veins be ascertained?

7. Write a short sketch of the geology of the region around Montreal.

8. What are the principal points to be noted in the examination of any region for minerals of economic value?

9. Describe briefly the instruments necessary for ordinary geological field-work and the manner of using them.

10. Draw a geological section showing the rocks along the line marked on the accompanying map.

FACULTY OF APPLIED SCIENCE.

SECOND YEAR MATRICULATION.

MATHEMATICS (First Paper.)

TUESDAY, SEPTEMBER 18:—9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. To a given straight line to apply a parallelogram, which shall be equal to a given triangle, and have one of its angles equal to a given rectilineal angle.

2. If a straight line be divided into two equal, and also into two unequal, parts, the squares on the two unequal parts are together double of the square on half the line and of the square on the line between the points of section.

3. On a given straight line to describe a segment of a circle, containing an angle equal to a given angle.

Given the base, vertical angle, and sum of the sides of a triangle, construct the triangle.

4. In a right-angled triangle, if a perpendicular be drawn from the right angle to the opposite side, the triangles on each side of it are similar to the whole triangle.

5. Show how to divide a given straight line into any given number of equal parts.

6. Planes to which the same straight line is perpendicular are parallel.

7. Show that:

$(ay-bx)^2 + (cx-az)^2 + (bz - cy)^2 = (a^2 + b^2 + c^2)(x^2 + y^2 + z^2) - (ax + by + cz)^2$.

8. Solve the equations:

(1) $\dfrac{x}{x-x} = \dfrac{a-x}{x} \quad \dfrac{2a-x}{2x}$,

(2) $\dfrac{a^2}{b+x} + \dfrac{a^2}{b-x} = c$.

9. Solve the simultaneous equations:

(1) $ax + 1 = by + 1 = ay + bx$,

(2) $3x^2y = 144 = 4xy^2$.

10. Resolve, $12x^2 - x - 1$, $3x_2 - 2x - 5$, and $12a^4 + a^2x^2 - x_4$ into factors.

11. Prove that the difference of the squares of any two odd numbers is exactly divisible by 8.

SECOND YEAR MATRICULATION.

MATHEMATICS (Second Paper).

TUESDAY, SEPTEMBER 18TH :—2 TO 5.

Examiner,.....G. H. CHANDLER, M.A.

1. Find the sine, cosine, tangent, and secant of 60° and also of 120°

2. Show that:

(1) $\sec^2 A = 1 + \tan^2 A$

(2) $\operatorname{cosec} A - \cot A = \sqrt{\dfrac{1-\cos A}{1+\cos A}} = \tan \dfrac{A}{2}$.,

(3) $\dfrac{\sin A + \sin B}{\cos A + \cos B} = \tan\left(\dfrac{A+B}{2}\right)$.

3. Find the radius of the circle inscribed in a triangle in terms of the sides of the triangle.

4. Solve the triangles of which are given:

(1) $C = 90°$, $A = 31° 21' 6''$, $c = 897{\cdot}3$,

(2) $a = 537{\cdot}21$, $B = 117° 23' 12''$, $C = 52° 18' 10''$,

(3) $a = 15{\cdot}32$, $b = 21{\cdot}56$, $c = 16{\cdot}22$.

5. A river flows between two towers, one of which is 40 ft. high; rom its summit the angle of elevation of the top of the other is found to be 2° 15′ 30″; and from its base the corresponding angle is 10° 18′ 15″; find the height of the other tower and the breadth of the river.

MATHEMATICAL PRIZE EXAMINATION.

TUESDAY, SEPTEMBER 18TH,:—9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Prove that:

(1) $\operatorname{cosec} A - \cot A = \sqrt{\dfrac{1-\cos A}{1+\cos A}} = \tan \dfrac{A}{2}$,

(2) $\tan A - \tan B = \dfrac{\sin (A+B)}{\cos A \cos B}$,

(3) $\sec 72° - \sec 36° = \sec 60°$,

(4) $\tan A + \cot A = 2 \operatorname{cosec} 2A$.

2. Express the logarithms of 5, and 4, and in terms of the logarithm of 25.

3. A line is drawn from (3, 1) to (4, −2) and produced in the same direction until its length is doubled; find the new extremity of the line and its total length.

4. Find the length of the perpendicular from the origin on the line whose equation is

$$a(x - a) + b(y - b) = o.$$

5. What is the area of the triangle whose angular points are (3, − 2), 5, 4), and (− 7, 3)?

6. Construct the circle whose equation is

$$x^2 + y^2 - 2x + 6y = 3,$$

and determine the equation of that diameter of it which passe through the origin.

7. Find the locus of the point which is equally distant from the axis of y and from the point (6, 0), and find the tangent at any point $(x_1, y_1,)$ on the curve.

8. Find the point in which the line which joins the focus and the extremity of the axis minor of an ellipse meets the curve.

9. Differentiate $(a + x)(b + x)$, $\log(\tan\frac{x}{2})$, $\sin^{-1}(2x - 1)$.

10. Integrate $a x^5 dx$, $\frac{x^5 dx}{1 + x^2}$, $\sin(3x - 1) dx$, and $\frac{x dx}{1 - 9x^2}$.

11. Find three terms of the expansion of $\tan x$.

12. Given the curve $y = (x - 1) x (x + 1)$, find

(1) where it meets the axes,

(2) wnere it is parallel to the axes,

(3) its tangent at any given point,

(4) its area from $x = o$ to $x = 1$.

FIRST YEAR.

PLANE GEOMETRY.

FRIDAY, DECEMBER 14TH:—MORNING, 9 TO 12.

Examiner,.....G. H. CHAMDLER, M.A.

1. If a side of any triangle be produced, the exterior angle is equal to the two interior and opposite angles; and the three interior angles of any triangle are together equal to two right angles.

2. If a straight line be divided into two equal and also into two unequal parts, the squares on the two unequal parts are together double of the square on half the line and of the square on the line between the points of section.

3. The angle at the centre of a circle is double of the angle at the circumference on the same arc.

4. If two straight lines cut one another within a circle the rectangle contained by the segments of one of them shall be equal to the rectangle contained by the segments of the other.

5. In a given circle inscribe a regular hexagon.

6. Find a mean proportional to two given straight lines.

7. In any right-angled triangle, any rectilineal figure described on the hypotenuse is equal to the sum of the similar and similarly described figures on the sides containing the right angle.

8. Given that the base of a triangle = 4 inches, and that the difference of the squares on the sides = 10 square inches; find the locus of the vertex.

9. The sum of the squares on the sides of any quadrilateral exceeds the sum of the squares on the diagonals by four times the square on the straight line joining the middle points of the diagonals.

10. Given that the base of a triangle = 5 inches, and that its area = 10 square inches, construct the triangle so that its perimeter shall be as smal as possible.

11. Show by the method of transversals that the lines joining the vertices of a triangle to the points of contact of the inscribed circle meet in a point.

12. ABC is any triangle and O any point in the plane of the triangle; AO, BO, CO meet the opposite sides in A', B', C'; prove that $A'B'$, $B'C'$, $C'A'$ intersect AB, BC, CA, respectively, in points which lie in one straight line.

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FIRST YEAR.

SOLID GEOMETRY—ARITHMETIC.

FRIDAY, DEC. 14TH :—2 TO 5.

Examiner.....G. H. CHANDLER, M.A.

1. If a straight line be perpendicular to each of two intersecting straight lines at their point of intersection, it shall be perpendicular to the plane which contains them.

2. Every plane passing through a perpendicular to a plane is also perpendicular to that plane.

3. Show that there cannot be more than five regular polyhedra.

4. Enumerate the different conic sections, and mention how each may be obtained.

5. Find the surface and volume of a sphere.

6. A railway embankment across the valley has the following dimensions: width at top 20 ft., at base 45 ft., height 11 ft., length at top 1020 yds., at base 960 yds. Find the number of cubic yards of earth in the embankment.

7. Show that one mile per hour : one foot per second : : 22 : 15.

8. Express $\frac{3\frac{2}{3}}{2\frac{1}{3}-\frac{4}{3\frac{1}{3}}}$ cwt. as a decimal of a ton.

9. A can run at the rate of 8 miles per hour, and B at the rate of $7\frac{1}{2}$ miles per hour; what is the greatest number of yards start that A may give B and beat him in a race of 440 yards?

10. Calculate (to 3 decimal places) the diameter of a sphere of which the surface is 20 square inches.

SECOND YEAR.

EUCLID, ALGEBRA, TRIGONOMETRY.

TUESDAY, DECEMBER 18TH. :—9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. Describe a square that shall be equal to a given rectilineal figure.

2. If a tangent and a secant to a circle be drawn from a given point, the square on the tangent shall be equal to the rectangle contained by the segments of the secant.

3. Parallelograms which have one angle of the one equal to one angle of the other, and their sides about the equal angles reciprocally proportional, are equal in area.

4. If from the vertical angle of a triangle a straight line be drawn perpendicular to the base, the rectangle contained by the sides of the triangle shall be equal to the rectangle contained by the perpendicular and the diameter of the circumscribed circle.

5. If $a : b :: c : d$, prove that $2a^2 - 3b^2 : 2c^2 - 3d^2 :: a^2 + b^2 : c^2 + d^2$.

6. Simplify the fraction $\dfrac{3\sqrt{\frac{1}{3}} + 2\sqrt{\frac{1}{2}}}{\frac{1}{2}\sqrt{\frac{1}{3}} - \frac{1}{3}\sqrt{\frac{1}{2}}}$, and show that

$$\left\{a^2 + (a^2 b)^{\frac{2}{3}}\right\}^{\frac{1}{2}} + \left\{b^2 + (a b^2)^{\frac{2}{3}}\right\}^{\frac{1}{2}} = \left(a^{\frac{2}{3}} + b^{\frac{2}{3}}\right)^{\frac{3}{2}}$$

7. Solve the equations

(1) $$\frac{a}{bx} - \frac{b}{ax} = a^2 - b^2,$$

(2) $$\frac{5x}{x+4} - \frac{3x-2}{2x-3} = 2,$$

(3) $$\sqrt{x} + \sqrt{a-x} = 2\left(\sqrt{x} - \sqrt{a-x}\right).$$

8. Find x and y from the equations

$$2x^2 + 3y^2 = 5 = -5(2x + 3y).$$

9. Prove that

(1) $$\cot A - \sec A \operatorname{cosec} A (1 - 2\sin^2 A) = \tan A,$$

(2) $$\frac{\cot A + \cot B}{\tan A + \cot B} = \frac{\tan B}{\tan A},$$

(3) $$\frac{(\operatorname{cosec} A + \sec A)^2}{\operatorname{cosec}^2 A + \sec^2 A} = 1 + \sin 2A.$$

10. Given the equation

$$\frac{\cos(\alpha + \theta)}{\sin \alpha} = \frac{\cos(\alpha' - \theta')}{\sin \alpha'}$$

how that $\tan \theta = \frac{1}{2}(\cot \alpha - \cot \alpha')$.

11. Solve the triangles in which

(1) $a = 97.6$, $B = 36° 43' 20''$, $C = 22° 10' 15''$.

(2) $a = 21.34$, $b = 16.17$, $c = 8.15$.

SECOND YEAR.

ANALYTIC GEOMETRY—MECHANICS.

TUESDAY, DECEMBER 18TH.:—2 TO 5.

Examiner,.....G. H. CHANDLER, M.A.

1. Plot the curves

$$(1)\ y = 2x^2 - x,$$
$$(2)\ x^2 - y^2 = 2$$

2. By reducing the equation $2x - y - 2 = 0$ to the forms $\frac{x}{a} + \frac{y}{b} = 1$ and $x \cos a + y \sin a = p$, determine the intercepts of the line on the axes and its distance from the origin.

3. Find the distance of the same line from the point $(2, -1)$.

4. Given the equations

$$x^2 + y^2 - 2x - 4y - 20 = 0,$$
$$x^2 + y^2 - 14x - 16y + 100 = 0,$$

(1) Find their centres and radii.

(2) Their points of intersection.

(3) The equations of their common chord and of the line joining their centres, and show that these lines are at right angles to one another.

(4) The equations of two circles concentric with the above but passing through the origin.

5. Show that the equations of the tangent and normal of the curve $x^2 - y^2 = 2$ are respectively

$$x'x - y'y = 2, \text{ and } \frac{x}{x'} + \frac{y}{y'} = 2$$

6. A stone is thrown upward with a velocity of 64 ft. per second; when is it 48 ft. above the ground?

7. Distinguish between kinetic and potential energy, and find (approximately) in foot-pounds the energy stored up in a fly-wheel which weighs 500 lbs. and is making 200 revolutions per minute.

8. Resolve a force of 20 lbs. into two others, whose sum is 22 and which contain an angle of 60°.

9. Explain how any number of forces in one plane may be reduced to a single force acting at any point in the plane, and a single couple.

10. Prove that the direction of reaction of a rough surface when motion is on the point of beginning is inclined to the normal at an angle equal to the angle of repose.

11. Find the magnitude and direction of the least force which will drag a body along a rough horizontal plane.

12. If a shaft terminate in cylindrical journals and E_1 be the loss of energy in one revolution when the shaft is vertical, E_2 when it is horizontal, show that

$$\frac{E_1}{E_2} = \tfrac{2}{3} \sec a,$$

a being the angle of repose .

THIRD YEAR.

MATHEMATICS.

TUESDAY, DECEMBER 18TH:—9 TO 12.

Examiner, ... G. H. CHANDLER, M.A.

1. Find the distance of the point of intersection of the lines $2y - 4x = 10, 3y + 9x + 21 = 0$, from the line $3x - y + 15 = 0$.

2. Find the centre and radius of the circle

$$x_2 + y_2 - 2x + 6y = 3,$$

and the equation of that diameter of it which passes through the origin.

3. Determine the equation of the circle which has its centre at the point (1,—3), and which touches the straight line $2x - y = 4$.

4. Find the equation of the tangent at any point of a parabola.

5. Define the conjugate diameters of an ellipse, and mention some of their properties.

6. The legs of a pair of compasses standing vertically upon a hori zontal table are gradually extended so that the hinge descends vertically ; show that any point in one of the legs describes an ellipse of which the segments of that leg are semi-axes.

7. Show that

(1) $$d\left(\frac{x}{1+x}\right)^n = \frac{n x^{n-1} dx}{(1+x)^{n+1}},$$

(2) $$d(\cos 2x^2) = -4x \sin x^2 dx.$$

(3) $$d(x e^{\cos x}) = e^{\cos x}(1 - x \sin x) dx$$

8. If $y = a(\sin x - \cos x)$, prove that $dx = \dfrac{dy}{\sqrt{2a^2 - y^2}}$.

9. Prove that the angle which the rudder makes with the keel of a ship when its turning effect is the greatest possible is 54° 44′ 8″.

10. Show that the axis of x intersects the curve

$$y = a(\sin x - \cos x)$$

in points of inflexion.

11. Considering the space bounded by the lines $x = 1$, $x = 2$, the curve $xy = 2$ and the axis of x; show that its area $= \log_e 4$, that the volume formed by its revolution about the axis of $x = 2\pi$, and that the line $x = 2y$ passes through its centre of gravity.

12. Find the moment of inertia of a rectangle about one of its sides and of a circle about a diameter.

THIRD YEAR.

MECHANICS.

TUESDAY, DECEMBER 18TH:—2 TO 5.

Examiner, ... G. H. CHANDLER, M.A.

1. A body falling freely describes 112.7 feet in a certain second; how long previously to this has it been falling?

2. A ladder weighing 4 cwt. is placed against the side of a house with which it makes an angle of 30°; find the horizontal force necessary to prevent its slipping along the ground supposing its centre of gravity to divide its length in the ratio of 3 to 5, and friction to be neglected.

3. A cone 4 inches in diameter and 20 inches high stands symmetrically upon a cylinder (of the same material) 6 inches in diameter and 14 inches high, which rests upon a plane. The co-efficient of friction between the cone and cylinder is $\frac{1}{2}$, and between the cylinder and plane is $\frac{2}{5}$. What will take place if the inclination of the plane be gradually increased?

4. Show that the centre of gravity of three equal weights placed at A, B, C is coincident with the centre of gravity of the triangle ABC.

5. A body having a spherical base is placed on the top of a sphere; determine the condition that the equilibrium may be stable.

6. Find the centre of pressure of a triangle whose base is horizontal and vertex in the surface of a fluid.

7. Describe the construction and mode of action of the Bourdon pressure gauge.

8. A cylinder 20 ft. long is half filled with water and inverted with the open end just dipping into a vessel of water; find the altitude of water in the cylinder.

9. Define the elasticity of a gas, and prove that the elasticity of a perfect gas at constant temperature is numerically equal to its pressure.

10. A cubic foot of air at temperature 10° *F.* under a pressure of 29.5 inches of mercury is cooled down to 40° *F.* and compressed by an additional 10.5 inches of mercury; show that the volume will be reduced to 1137.86 cubic inches.

FOURTH YEAR.

MATHEMATICS.

FRIDAY, DECEMBER 21ST:—9 TO 12.

Examiner,..... .....G. H. CHANDLER, M.A.

1. Find the sum of the fractions $\frac{1}{\sqrt{3}}, \frac{1}{3}, \frac{1}{\sqrt{27}}$, &c., to 7 terms, and also to infinity.

2. Solve the simultaneous equations

$$\left.\begin{aligned} x^2 + y^2 &= 8 \\ \frac{1}{x^2} + \frac{1}{y^2} &= \frac{1}{2} \end{aligned}\right\}, \qquad \left.\begin{aligned} \frac{x+y}{x-y} + \frac{x-y}{x+y} &= \frac{5}{2} \\ x^2 + y^2 &= 20 \end{aligned}\right\}.$$

3. Show that

(1) $$\frac{\cos A + \sin A}{\cos A - \sin A} = \tan 2A + \sec 2A.$$

(2) $$\tan^2 \frac{\theta}{2} = \frac{2\sin\theta - \sin 2\theta}{2\sin\theta + \sin 2\theta}.$$

(3) $$\tan^2 50^\circ + \cot 50^\circ = 2 \sec 10^\circ.$$

4. Distinguish between Napierian and common logarithms, and prove the rule for reducing the former to the latter.

5. The co-ordinates of the vertices of a triangle are (3,—2), (7, 1), (5, 9); find the area of the triangle, and the length of the perpendicular let fall from the third point on the line joining the other two.

6. Find the centre and radius of the circle

$$7x^2 + 3y^2 - 4y - (1 - 2x)^2 = 0,$$

and the points in which it cuts the axes.

7. The major axis of the ellipse $9x^2 + 16y^2 = 144$, and the axis of a parabola are in one straight line and the vertex of the parabola is at the centre of the ellipse; find the points of intersection of the curves, the parameter of the parabola being equal to the minor axis of the ellipse.

8. Find the curve from any point of which two normals at right angles to one another may be drawn to a given parabola.

9. How large a cylinder may be cut out of a given cone?

10. Find differential expressions for the tangent, normal, subtangen and subnormal of any curve referred to rectangular axes.

11. Show that

(1) $$\int_a^{2a} \sqrt{x-a}\ dx = \frac{2}{3} a^{\frac{3}{2}},$$

2) $$\int_{-a}^{+a} (a \pm x)^n\ dx = \frac{(2a)^{n+1}}{n+1},$$

(3) $$\int_a^{\infty} \frac{dx}{(a+x)^n} = \frac{1}{(n-1)(2a)^{n-1}},$$

(4) $$\int_0^{\frac{\pi}{4}} \frac{dx}{\cos^2 x} = 1,$$

(5) $$\int_0^{\frac{\pi}{4}} \tan^2 x\ dx = 1 - \frac{\pi}{4}.$$

12. Trace the curve $x^2 y = 2$; find the area between $x = 1$ and $x = 2$, and the volume of the solid formed by revolving this area about the axis of x.

MATERIALS, (*PAPER I.*)

TUESDAY, APRIL 1st:—MORNING, 9 A.M.

B. A. Sc. THIRD AND SECOND YEARS.

Examiners,..... { HENRY T. BOVEY, C.E.
JOHN KENNEDY, M. INST. C.E.

N. B.—Question 13 *must be answered by all.*

1. Explain what is meant by the strength, hardness, ductility, malleability, fusibility, and lustre of a metal.

2. Give a geological classification of the ores of iron.

3. State the characteristics of meteoric iron, magnetic iron oxide and red hematite.

4. What are the considerations which determine the value of an ore?

5 Describe the processes of dressing, weathering, grading, and roasting ores.

6. Make a pen and ink sketch of the section of a blast furnace. Describe the furnace?

7. Explain the operation of putting a furnace in blast.

8. State the effect upon cast-iron of the following impurities:—Silicon Phosphorus, Magnesia, Sulphur and Titanium?

9. What is malleable cast-iron? How is it made? What is its use?

10. Explain, in detail, the method of casting a large cylinder?

11. If required to examine a casting, how would you proceed?

12 Write out a specification, (*a*).— for water-pipes, (*b*).—for the cylinder of an engine?

13. Describe the specimens on the table.

MATERIALS. (*PAPER II.*)

TUESDAY, APRIL 1st; AFTERNOON, 2 to 3 P.M.

N.B.—*Question* 11 *must be answered by all.*

1. Describe *briefly* the processes employed in making the chief kinds of wrought-iron?

2. Give the principal characteristics of cast-iron (including malleable castings), wrought-iron (including ingot-iron), and steel (including steel castings) with reference to the processes by which they are worked up for use in engineering structures?

3. How does extreme cold affect the behaviour of iron and steel under stress?

4. What is the best material for railway bridges of considerable size? Why?

5. What is the best material for marine engine cranks? Why?

6. Describe the Bessemer process of making steel?

7. Describe the "converting" furnace used in the cementation process?

8. Write out specifications for (*a*).— a wrought-iron Pratt-truss bridge, *b*.—a steel boiler?

9. How would you test, (*a*).—the wrought-iron for a bridge, (*b*).—the steel for a boiler?

10. What is the object of "tempering"? How are mason's tools tempered? Why are the articles to be tempered sometimes dipped in oil

11. Describe the specimens on the table

ESSAYS.

WEDNESDAY, 2ND APRIL:—MORNING, 9 A.M.

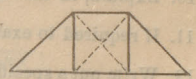
Examiner,..... .....HENRY T. BOVEY, M.A., C.E.

SECOND YEAR. (*Course of Civil Engineering.*)

Write an essay on the permanent way of a railroad.

THIRD YEAR. (*Course of Civil Engineering.*)

Write an essay on Kingpost and Queenpost trusses, and on trusses of the type shewn in the Fig., carefully explaining in each case, (*a*).—how to determine the stresses in the several members, (*b*).—how to design these members.



B. A. Sc. (*Course of Civil Engineering*).

Write an essay on the processes for gauging rivers and streams, and on the instruments employed in measuring the velocity of the water, with especial reference to (*a*).—the gauging by observation of *maximum* surface velocities, (*b*).—the determination of the *mean* velocity from (1).—a series of surface velocities, (2).—a series of mid-depth velocities, (*c*).—Harlacher's graphical method of obtaining the discharge, (*d*).—The use and manipulation of surface-floats, sub-surface floats, twin-floats, velocity-rods, current-meter, Darcy's gauge, hydrodynamometer.

B. A. Sc. (*Course of Mechanical Engineering.*)

Write an essay on the transmission of power by wire-rope gearing, with especial reference, (*a*)—.to the distance traversed and the deflection of the rope, (*b*).—to the frictional resistance (*c*).— to the influence of centrifugal force.

RAILWAY-WORK, (*PAPER I.*)

WEDNESDAY, APRIL 9:—MORNING, 9 A.M.

Examiners, ... { HENRY T. BOVEY, M.A., C.E.
P. A. PETERSON, M. INST. C.E.

1. In making an instrumental survey for a railway what information would you consider it necessary to obtain and lay down on your plan?

2. Two points are 1000ft. apart horizontally and 100ft. vertically. Make an imaginary section between them, and shew how you would keep your level book, supposing the instrument to be changed five times.

3. Explain how the centre line of a railway is staked out?

Two points five hundred feet apart are to be joined by a 4° curve, set out the curve, and give its length. Also set out the curve when the point of intersection of the two tangents at the springings is inaccessible.

4. A train runs at 20 miles an hour upon an incline of, 1 in 700, 100 miles long. Find the equivalent length on the level for the same speed, considering only the power expended. How would you take into account the *cost* of exerting such power? Exemplify your answer by finding the equated length of a line of 111 miles, running from A to B through the stations C D, E and F, the speed being the same as before.

From A to C the line falls 20 feet per mile, and the distance is 36 miles.

C to D	"	rises 32	"	"	27	"
D to E	"	falls 40	"	"	12	"
E to F	"	rises 54	"	"	12	"
F to B	"	falls 12	"	"	24	"

5. On a line of railway the ruling gradient on tangents is 1 per 100; find the greatest gradient on a 4° curve, so that the traction may be the same as on the tangents.

6. Discuss the financial effect of grades and curves.

7. Explain the method of setting out the side-widths (1).—for a cutting or embankment when the ground has a horizontal surface, (2).—for a cutting or embankment when the ground has a sidelong inclination, (3).—for a part cutting and part embankment when the ground has a sidelong inclination.

A railway is to be built over-ground having a sidelong slope of 30°. In one length of 400 yards, the central depths in feet to formation level for five sections 100 yards apart, beginning at one end of the length, are 30, 25, $10.\sqrt{3}$ 10 and 2. Determine the positions of the side-stakes for each section, and also find the number of cubic yards to be removed, and the number required for embanking.

8. Find the cost of an embankment of 200,000 cubic yards, 100,000 being of clay and clay earths, 20,000 of rock, 50,000 of gravel and sand, and the remainder of loam and light sandy earth, assuming that the clay and clay earth, the gravel and sand, the loam and light sandy earth, shrink respectively 10 per cent., 9 per cent., 12 per cent., and that the rock expands 50 percent.

RAILWAY WORK, (*PAPER II.*)

WEDNESDAY, APRIL 9TH :— AFTERNOON, 2.30 p.m.

1. State the requirements of the permanent way of a railroad.

2. Explain the use of ballast. What are the materials commonly used as ballast? Compare their relative efficiency.

3. Compare the relative advantages and disadvantages of timber longitudinal and cross ties.

4. Enumerate the kinds of timber generally employed for ties, and discuss their suitability, both as regards strength and durability.

Describe a mechanical method of increasing the life of a tie.

5. Write out specifications for, (*a*).—the ballast and ballasting of a railroad, (*b*).—the ties.

6. Draw to scale a cross-section of permanent way, *giving all necessary dimensions*, (*a*).—for a cutting, the track being double, (*b*).—for an embankment, the track being single.

7. Describe the Lorenz safety switch, and explain its action if a train attempts to pass out of a siding, when the switch is set for the main track.

8. Describe, *with sketches*, (*a*).—a stiff frog, (*b*).—a spring frog.

9. Write out a specification for a steel rail for heavy traffic.

What are the advantages claimed for *soft* steel rails?

How would you test a steel rail for strength and durability?

B. A. Sc., ORDINARY EXAMINATIONS.

MACHINERY & MILLWORK. (*Course of Mechanical Engineering.*)

FRIDAY, 4TH APRIL :—MORNING, 9 A.M.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. State the conditions which govern the outline of the teeth of spur wheels, and prove that they are fulfilled by involute and epicycloidar teeth

2. Explain how the obliquity of the line of connection between two spur wheels affects the friction of gearing, and deduce an expression giving the average force of friction reduced to the pitch circle.

Two spur wheels have respectively 36 and 12 teeth; P the circumferential force at the pitch circle makes an angle with the direction of the pressure between the tooth surfaces equal to $sin\ (\frac{2}{5})$; the coefficient of friction is ·106; shew that the average force of friction is very nearly $\frac{P}{18}$

3. In an endless belt the tight and slack tensions are $2P$ and P; the coefficient of friction between the belt and wheels is $\frac{1}{2}$; the speed of the belt is 20-ft. per sec. Determine (*a*).—the arc of contact on each wheel, (*b*).—the power transmitted. The diars. of the pulley journals are 1-20 of the diars of the pulleys; the coeff. of journal friction is 1-10; what per centage of the power transmitted is lost in journal friction?

4. The driving pulley in the preceding question has a diar of 1-ft.; by how much should the belt be tightened to overcome the effect of centrifugal force? What will be the loss due to the *creeping* of the belt? E= 28,400-lbs., the maximum tensile inch stress in the belt = 275 lbs., the specific weight of the belt =.278 lbs per cubic inch.

5. Shew how to determine the centrifugal force arising from a cylindrical crank-pin, and apply to the following case —length of wrought-iron crank pin= 8-ins., diar of pin = $4\frac{3}{4}$-ins., length of crank= 24-ins.; number of revolutions of engine per minute=60.

6. Write a brief description of the different kinds of pivots, pointing out their respective characteristics, and the considerations which determine those diars.

What should be the diar. of the pivot for a turbine making 125 revolutions per minute? The coefficient of friction being ·1 how much work will be consumed by the friction of the pivot?

7. Explain what is meant by *efficiency* and *counter efficiency*.

Show how to determine the efficiency of teeth, and apply to the case in question 2.

8. Discuss the application of pantographic linkages to the duplication of rectilinear motions in the steam engine?

9. Design a rotating cam from the following data :—as the cam turns through 60° the sliding piece is to remain at rest, through the next 60° it is to move uniformly forward 2-ins, through the next 60° it is to remain at rest, through the next 120° it is to move uniformly forward 2-ins., and through the next 60° uniformly backwards.

B.A. Sc. ORDINARY EXAMINATIONS.

WEDNESDAY, APRIL 9TH:—MORNING, 9 A.M.

CUTTING TOOLS (*Course of Mechanical Engineering*).

1. Discuss the difference in the cutting as effected by a wood-plane and by a paring chisel.

2. Briefly describe a wood planing machine, with vertical spindle. How would you calculate the feed, assuming four cutters to be arranged round a circle of 2-ft. diar. and the spindle to make 1,000 revolutions per minute?

Explain the importance of setting the chisels correctly.

3. Make sketches of, (*a*).—Cutters for boring out an engine cylinder of large size, (*b*).—Drills and reamers for the tapered holes of locomotive work, (*c*).—The principal varieties of ordinary wood-working bits and augers with details of the cutting and centreing portions, (*d*).—An ordinary rotary cutter suitable for planes, moulding and other wood-working machines.

4. Describe a face-plate chuck with milling cutters which may be substituted for the ordinary circular cutter of a milling machine, and point out its characteristics.

5. Explain the different systems of driving planing machines.

6. Describe the feed-motions given to the table of a slotting machine.

7. How is an accurate traverse feed obtained for screw cutting? What, in your opinion, is the best position in the lathe bed for the leading screw? How is the leading screw made to rotate?

8. Point out the principal features of a face-lathe.

9. Briefly describe, with sketches, two different tool-holders suitable for lathe work.

10. Design a drilling-machine table which can freely move under the drill in two horizontal directions.

B.A. Sc. (*Course of Mechanical Engineering.*)

STEAM BOILERS, ETC.

THURSDAY, APRIL 10TH:—MORNING, 9 A.M.

Examiners,..... { HENRY T. BOVEY, M.A., C.E.
JOHN KENNEDY, M. INST. C.E.

1. Two wrought-iron plates, ·325-inch thick and 30-ins. wide, are to be rivetted together. Give the number, arrangement and dimensions of the rivets you would employ for boiler-work in the following cases:—

(*a*). Lap-joint, single row of rivets.

b). Lap-joint, chain rivetting.

2. Write out a specification for the rivetting of a steel marine boiler o 12-ft. diar. and 9-ft length, which is to carry steam of 90-lbs. pressure per sq. in.

3. Make sections of an ordinary cylindrical tubular boiler of about 400 sq.-ft. heating surface.

4. Describe *fully* the usual methods of strengthening furnace flues.

5. Make sections of a steel straight top locomotive boiler of about 1000-sq.-ft. heating surface, which is to carry steam of 145-lbs. per sq.-in. (for an ordinary express engine).

6. In a set of marine boilers there are 2500 circular tubes of 3-ins. external diar., $\frac{1}{4}$-in. thick, and 6-ft. long. If these tubes are replaced by 4000 circular tubes of the same total volume, determine the increase in the heating surface and also the power developed, 16-sq.-ft. being equivalent to 1-horse-power.

7. Describe the ordinary mercurial and the Bourdon pressure gauge, pointing out their respective characteristics.

8. Write a brief description of furnace-fittings.

9. How should a boiler be set?

10. State some of the causes of the leakage of boilers, and explain in each case how you would remedy this evil.

11. What is meant by the grate-surface of a boiler? "There cannot be too little grate-area for economical evaporation." Discuss this statement.

12. How would you test a boiler? Give your reasons.

13. Give a classification of the methods proposed and practised for the prevention and removal of boiler-incrustation, and discuss in detail the practice of introducing chemical agents into the boiler.

B.A. Sc. ORDINARY EXAMINATIONS.

STEAM-ENGINE (*Course of Mechanical Engineering.*)

TUESDAY, 15TH APRIL :—MORNING, 9 A.M.

Examiners,..... { HENRY T. BOVEY, M.A., C.E.
JOHN KENNEDY, M. INST. C.E.

1. In a given engine the length of the cast-iron cylinder is 36-ins., its diameter is 18-ins., the initial pressure of the steam is 5 atms.; determine *a*.—the thickness of the cylinder wall, (*b*).—the thickness of the cylinder-head, (3).—the number of $\frac{7}{8}$-in. stud-bolts required to secure the cylinder-head.

2. Sketch sections of an ordinary non-condensing tug-engine cylinder of 18-ins. diar. and 20-ins. stroke, with rocking valve.

3. Explain the success of certain empirical rules which give a constant ratio between the diameters of piston-rods and steam-cylinders, regardless of the steam-pressure.

4. The engine in question 1 makes 44 revolutions per minute. If the connecting rod is 5 times as long as the crank, what must be the area of the slide, allowing a pressure of 125 lbs. per sq.-in. ?

5. Shew how to determine the dimensions of and the distance between the guides.

6. What are the principal points to be considered in the design of a connecting rod?

Make drawings of the two ends of a connecting rod of 8-ins. diameter which is to work on a crank-pin of 14-ins. diameter and 15-ins. length.

7. Discuss the action of the weight and velocity of the reciprocating parts of a horizontal engine.

Determine the proper weight of the reciprocating parts of a 60 horse-power horizontal condensing engine, the initial pressure being 125 lbs. per sq.-in., the rate of expansion 5, the length of stroke 1-ft.

8. Compare the relative values of cast-iron, wrought-iron and steel for cranks, and describe the process of designing a wrought-iron single crank.

9. Enumerate the stresses to which a crank-shaft is subjected, and show how the shaft must be designed to withstand them.

10. Explain how you would determine the proper proportions of a key for a shaft, and apply to the case of the 10-ins. shaft for the engine in question 7, the key being of steel (safe shearing stress per sq. in. = 5000-lbs.)

11. What precautions are to be observed with regard to the journal bearings of a crank-shaft?

12. Three cranks, each 20-ins. in length, are 120° apart, drive a steel shaft. The horizontal pull upon each crank is 80,000-lbs.; determine the proper diameter of the shaft.

B. A. Sc. AND THIRD YEAR.

APPLIED MECHANICS. [*Paper I.*]

FRIDAY, APRIL 4TH :—MORNING, 9 A. M.

Examiner,..... ..HENRY T. BOVEY, M.A., C.E.

1. "At every point within a strained body there are two planes at right angles to each other upon which the stress is wholly normal, and an ellipse may be constructed with the point as centre whose semi-diameter in any direction represents the intensity of the stress in that direction."

Prove this statement, and clearly state all the assumptions made.

At a point within a strained solid, the stresses on two planes at right angles to each other are thrusts of $50\sqrt{2}$ lbs. and 60-lbs. per sq.-in., the obliquities being 45° and 30° respectively. Determine, (*a*).-the planes of principal stress, (*b*).-the ellipse of stress, (*c*).-the intensity of stress upon at clined at 60° to the major axis.

2. Shew that the ratio of two conjugate stresses at a point within a strained mass is $tan^2\frac{a}{2}$, it being given that $\sin\alpha = \frac{\cos\varphi}{\cos\theta}$, that $90-\theta$ is the angle between the two stresses, and that ϕ is the maximum value of θ.

3. If the principles of the ellipse of stress are applicable within a mass of earth, and if at any point of the mass the stress upon a plane is double its conjugate stress, the angle between the two stresses being 30°, shew that the angle of repose of the earth is 28°.1

4. A wall with offsets rest on an impermeable foundation. Is it correct to assume that the stability of the wall is increased by the weight of "the earth-work superimposed vertically over the offsets"? Why? Would the wall be more stable if water were substituted for this earthwork?

Sketch a wall suitable for a bad foundation, and explain why it is not desirable to employ a wall with deep offsets.

5. A dock-wall having its back plumb and its face with a batter of 1 in 24, is 20-ft. high, and 9-ft. wide at the base. In the rear, counterforts projecting 3-ft. and running 6-ft. along the line of the wall occur at intervals of 12-ft. Determine the thickness of an equally strong wall *without* counterforts with the same face batter and also plumb in the rear.

Compare the amount of masonry in the two walls.

6. If the walls in the preceding question are founded in earth weighing 112-lbs. per cubic foot, and having an angle of repose equal to 32°, find the least depth of foundation in each case weight of masonry = 135 - lbs. per cubic ft.

7. State the conditions of equilibrium of a masonry arch, and shew that the maximum stress in any joint is $\frac{2}{3}\frac{R}{x}$ $\frac{2.R.}{t}\left(2-\frac{3x}{t}\right)$ according as x is less or greater than $\frac{t}{3}$, R being the total reaction at the joint, t the thickness of the joint, and x the distance from the centre of resistance to the most compressed edge.

A masonry arch of 90-ft. span and 30-ft. rise, with a parabolic intrados and a horizontal extrados, springs from abutments with vertical faces, and 10-ft. thick, the outside faces being carried up to meet the extrados. The depth of the keystone is 3-ft. The centre of resistance at the springing is the middle of the joint, and at the crown 12-ins below the extrados. The specific weight of the masonry may be taken at 150 lbs per cubic foot.

Determine (*a*).-the resultant pressure in the vertical joint at the crown, (*b*)-the resultant pressure in the horizontal joint at the springing, (*c*)-the maximum stress in the vertical joint aligning with the inside of an abutment.

8. The abutments in the preceding question are 20-ft. high, and rest on perfectly good foundations. Examine their stability, both for position and friction, the co-efficient of friction being $\frac{3}{4}$.

Draw the curve of the centres of resistance for the horizontal joints in one of the abutments.

B.A.Sc. AND THIRD YEAR.

APPLIED MECHANICS. [*Paper II.*]

MONDAY, APRIL 7TH:—MORNING, 9 A.M.

Examiners, ... { HENRY T. BOVEY, M.A., C.E.
P. A. PETERSON, M. INST., C.E.

1. A water-wheel 20-ft. in diar. weighs 20,000-lbs. and makes 10 revolutions in one minute. The gudgeons are 6-ins. in diar. and the co-efficient of friction is ·1 Find the loss of mechanical effect due to friction. If the power driving the wheel be suddenly cut off, how many revolutions will the wheel make before coming to rest?

2. Enunciate Hooke's law of elasticity for a bar in a state of simple strain, and express the law analytically, explaining all the symbols employed.

A steel rod 900-ft. long and 3-ins. square, alternately exerts a thrust and a pull represented by 60,000-lbs. The co-efficient of elasticity of the steel being 30,000,000-lbs., find the loss of stroke and the corresponding loss of work.

3. Deduce Weyrauch's formula for the admissible stress per unit of area in a bar subjected to stresses which are alternately different in kind.

One of the wrought-iron diagonals of an isosceles bowstring girder is subjected to stresses which vary from a tension of 33,800-lbs. to a compression of 19,330-lbs. Find the sectional area of the diagonal, it being assumed that the *primitive strength* (u) is 30,000-lbs. per sq-in., that the *vibration strength* (s) is 15,000-lbs. per sq-in., and that 3 is a factor of safety.

4. Four equal and equally loaded carriage wheels with their centres, which are 5-ft. apart, connected by a rigid bar, roll over a horizontal beam of 18-ft. clear span. For what position of the wheels will the stress in the material of the beam be a maximum ?

5. A beam A B of 32-ft. span is divided into four equal segments by the points C, D, and E. A single load of 400-lbs. travels over the beam, which also carries a uniformly distributed load of 3200-lbs. Draw, *to scale*, the shearing force and bending moment diagrams when the beam is freely jointed, (a).–at C, (b).–at C and D, and (c).–at C, D and E.

6. Deduce an expression for the moment of resistance of a double-tee section, in which the web is to be taken into account. If the two flanges are of equal area shew that the web increases the moment by an amount equivalent to the increase which would be derived by adding *one-sixth* of the web area to each flange.

A cast-iron girder has a span of 20-ft., and a depth of 18-ins. at the centre. The top flange is 4-ins. wide and 1-in. thick, the bottom flange 12-ins. wide and 1-in. thick, and the web is 1-in. thick. The load upon the girder is 5,000-lbs. per lineal ft. Why is the flange of greatest sectional area placed downwards ? Find the maximum stress per sq. in. in the flanges and web ; also find the deflections at the centre and at a point 5-ft. from the centre, assuming that the moment of inertia is constant and equal to $\frac{3}{4}$-ths. of that at the centre. Determine the upward pressure to be applied at each of the points 5-ft. from the centre, to neutralize the deflection at these points.

7. A wrought-iron plate girder has a span of l-ft. and a depth of d-ft. A live load of w-lbs. per lineal ft. is to pass over the girder, which has also to carry a dead-load of w-lbs. per lineal ft. Determine the necessary weight of the girder. If $l \div d = 8$, and if the admissible stresses in shear, in tension, and in compression, are each 5277$\frac{7}{9}$ lbs. per sq.-in., prove that the limiting span of the girder is *theoretically* 1000-ft.

8. Describe a mechanical method of determining the moment of resistance of a section which is symmetrical with respect to a vertical axis.

Apply to the case of a cast-iron beam of an inverted tee section, having a span of 22-ft. and a depth of 20-ins. The width of the flange is 12-ins., its thickness 1.2-ins., and the thickness of the web 1-in. The greatest working stress in compression is to be 4-tons per sq.-in., find the greatest tensile stress.

9. A weight of 10,000-lbs. is suspended by a wrought iron rod 1-in. in diar. from the apex of a tripod composed of three pine struts each 8-ins. square and 40-ft. in length. The feet of the tripod are securely fixed at the angles of an equilateral triangle, having a side of $20\sqrt{3}$-ft. Find the stresses per sq. in. in the rod and struts; also find the factors of safety with respect to the ultimate strength, (*ultimate resistance to tension of the wrought iron* = 50,000-*lbs. per sq.-in.*; *ultimate resistance to compression of the pine* = 6,000-*lbs. per sq.-in.*; $a = .004$).

10. A Phœnix column of one diameter has an ultimate strength of 58,000 lbs. per sq. in. What is the ultimate strength of a column 28-ft. long. 12-sq. ins. in sectional area and 8-ins. in diam.—when it has (*a*).—two square ends, (*b*).—one square end and one pin end?

11. State the laws of torsion experimentally deduced by Coulomb, and give an analytical expression of these laws.

The torsion of a steel shaft 3-ins. in diar., and making 70 revolutions per minute, is 1-12th of the torsion of a shaft of the same material 1-in. in diar. which transmits 1000-ft.-lbs. Find the H. P. transmitted by the larger shaft.

B. A. Sc. AND THIRD YEAR.

APPLIED MECHANICS, (*Paper III.*)

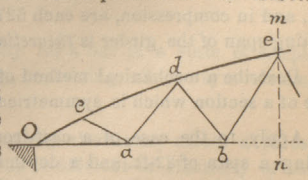
MONDAY, APRIL 7TH:—AFTERNOON, 3 P.M.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. A closed polygonal frame, jointed at the angles, is acted upon at the joints by external forces, and the whole system is in equilibrium. Shew that a second polygon may be drawn such that the sides will represent in direction and magnitude the forces applied at the joints, while radii to the angles from a pole will represent in direction and magnitude the forces in the several sides of the frame.

Hence, prove that the thrust at any point of a circular rib subjected to a normal pressure of intensity w is $w.\ r$, r being the radius of the rib.

2. Briefly describe the "*method of sections*" for calculating the stresses in the members of a framed structure, and apply it to the case represented by the accompanying sketch, which shows a portion of an isosceles bowstring truss, cut off by the plane *mn* and supported upon the abutment at *O*. The upper flange *O c d e* is an arc of a circle of 85-ft. radius; $Oa = ab = 10$ ft.; the distance of the horizontal tie *Oab* from the centre is 75-ft.; a load of 15-tons is concentrated at each of the points *a* and *b*; the reaction at $O = 45$-tons. Required the chord stresses at *O*, *c*, *d*, *e*, the stresses in the diagonals and in the tie



3. Verify your results in the previous question, graphically.

4. The post of a derrick crane is 30-ft. high. The horizontal traces of the two back-stays are at right angles to each other, and are 15 ft. and 25 ft. in length, shew that $\tan^{-1}(.6)$ is the angle between the shorter trace, and the plane of the jib and tie, when the stress in the post is a maximum. Also find the greatest stresses in the different members of the crane when the jib, which is 40-ft. long and is hinged at the foot of the post is inclined at 45° to the vertical, the weight lifted being 4000-lbs.

5. A roof is composed of two unequal rafters with slopes a_1, a_2, and uniformly distributed weights W_1, W_2; if Θ is the angle which the direction of the mutual thrust at the apex makes with the vertical, shew that $\tan \Theta = \dfrac{W + W}{W_1 . \tan a \ - W_2 . \tan a}$, and find the tension on the tie-beam.

Let the span of the roof be 30 ft.; also let $W = 8000$ lbs., $W_2 = 2400$ lbs., $a_1 = 30°$, & $a_2 = 45$. Determine the proper dimensions of the longest of the rafters, which are made of white pine, (*the safe tensile and compressive inch-stresses to be* 3300 *lbs.*, and 2700 *lbs.*, *respectively*.)

6. In calculating the stresses in the members of a roof truss, what assumption is made as to the distribution of the load upon the truss?

Shew that the reaction at the windward support due to the *horizontal* component of the wind-pressure, acts downwards.

7. The rafters of a roof are 20-ft. long and inclined to the vertical at 60° ; the feet of the rafters are tied by two rods which meet under the vertex and are tied to it by a rod 5-ft. long; the roof is loaded with 10-lbs.-per sq.-ft. on one side, and 33-lbs. per sq.-ft. on the other ; the trusses are 13-ft. centre to centre. Determine the stresses in the several members, *graphically*, or otherwise. Examine the effect of a horizontal pressure of 14-lbs. per sq.-ft., on the most heavily loaded side, assuming that the reaction is equally divided between the two supports.

8. The roof for a wharf shed 30-ft. wide slopes in *one* direction. Sketch a truss suitable to carry such a roof, and make careful drawings of all the joints.

B. A. Sc. ORDINARY EXAMINATIONS.

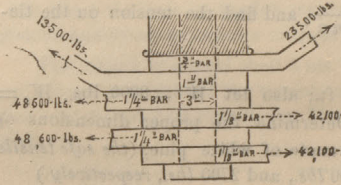
APPLIED MECHANICS. (*Paper IV*).

THURSDAY, APRIL 10TH:—MORNING, 9 A.M.

Examiners,..... { HENRY T. BOVEY, M.A., C.E.
P. A. PETERSON, M. Inst. C.E.

1. Explain how eye-bar heads are proportioned, and examine the truth of the following statement—"as far as the width of an eye-bar is concerned the diameter of the piece is of no importance, providing it is at least $\frac{3}{4}$-rds of the width of the bar, but the maximum thickness of the bar is entirely dependent on the relative diameter of the pin."

2.

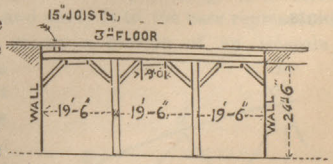


The accompanying sketch represents one of the pin connections in a certain Canadian bridge which wasr ecently overthrown The two innermost bars are web members inclined to the horizon. at an angle whose cosine is .815. The thickness of the bars and the maximum stresses to which they are severally subjected are shewn on the diagram. Is the 3-ins. wrought-iron pin sufficiently strong?

3. State the considerations which govern the thickness of the covers in tension and compression joints. Explain what is meant by chain riveting, and determine the relations between the tensile, shearing and bearing unit stresses when two plates of width w and thickness t are to be united by a single cover plate. The diar. of the rivets $=d$, N=total number of rivets on one side of the joint, and S= the total force transmitted.

Two steel plates 18-ins. wide and $\frac{1}{2}$-in. thick are to be joined by a cover plate, the rivets being $\frac{1}{2}$-in. in diar. The tensile and shearing stresses per sq.-in. are 11-tons and $8\frac{3}{4}$-tons respectively. Find the total number of rivets required, and give a plan of their arrangement. Also, find the bearing inch-stress, and give the tensile, shearing and bearing areas.

4. Determine the stresses and the sizes of the several members of the pine structure shewn in the accompanying sketch. The timber weighs 35-lbs. per cubic ft., the load upon the floor is 125-lbs. per sq. ft., the bents are 25-ft. and the floor-joists 2-ft. centre to centre.



(C for pine =4700-lbs.; ultimate compressive strength =6000-lbs. per sq. in.; a= ·004)

5. A Pratt truss with sloping end posts has a length of 150-ft. *c.* to *c.* and a height of 30-ft. *c.* to *c.*, with panels 15-ft. long. The dead load is 3000-lbs. per lineal ft. and the live load 1200-lbs. Determine the maximum stresses in the end posts in the 3rd post from one end, in the middl, of the bottom chord, and in the members of the 3rd panel met by a vertical plane.

6. Design a cross-tie for a double-track open web bridge, the ties being 18-ft. 5-ins. centre to centre, and the live-load for the floor system 8000-lbs. per lineal ft.

7. A bowstring roof truss of 50-ft. span, 15-ft. rise, and 5 panels is to be designed to resist a wind blowing horizontally with a pressure of 40-lbs. per sq. ft. The depth of the truss at the centre is 10ft. Determine, *graphically*, the stresses in the several members of the truss, assuming that the roof rests on rollers at the windward support.

B. A. Sc. ORDINARY EXAMINATIONS.

APPLIED MECHANICS. (*Paper V.*)

TUESDAY APRIL 15TH :—MORNING, 9 A.M.

Examiner,.....HENRY T. BOVEY, M.A., C.E

1. A uniformly loaded flexible cable $A\ O\ B$ is suspended from the two points A and B, O being the lowest point of the cable ; P is any other point whose horizontal and vertical distances from O are respectively x and y ; shew that, approximately, the arc $O\ P = x + \frac{2}{3} \cdot \frac{y^2}{x}$.

If A and B are in the same horizontal plane, and if a is the span and h. the dip of the cable, prove that its deflection corresponding to an elementary change in its length is $\frac{3}{16} \cdot \frac{f}{E} \cdot \frac{a^2}{h}$, being the unit stress in the cable and E its co-efficient of elasticity.

2. Shew how to determine the weight of a cable, (*a*).—when the section is uniform, (*b*) —when the section at any point is proportioned to the tension at that point.

3. Explain the object of the stiffening truss.

Assuming that the deflection of the cable at the centre is equal to that of the stiffening truss at the same point, prove the relation,

$$\frac{d\ (= \textit{depth of truss})}{h\ (= \textit{dip of cable})} = \frac{4}{3} \cdot \left\{ \frac{f_2}{E_2} \div \left(\frac{f_1}{E_1} + a\ t \right) \right\}$$

f_1 f_2 being the unit stresses, and E_1, E_2, the co-efficients of elasticity for the cable and truss respectively, a being the elongation of the cable due to a rise of 1° in the temperature, and t the variation in degrees from the mean temperature.

4. The Niagara Suspension Bridge has a span of 800ft., and the average dip of the cables is 60 ft. Determine the depth of the stiffening truss, it being given that the allowable stress per sq.-in is 10 tons for the cable and $4\frac{1}{6}$ tons for the truss, that the co-efficient of elasticity is 12,000 tons for both cable and truss, that the variation from the mean temperature is 100°, and that the elongation of the cable per degree of temperature is .00000686.

Also find (*a*).—the constant sectional area of a cable (there are two on each side), (*b*).—the unit load due to the variation from the mean temperature, (*c*).—the weight of a cable, (*d*)—.the length of a cable

(*The dead load on each cable* $= \frac{1}{8}$ *ton per lineal ft.*)
(*The live load* " $\frac{1}{4}$ " " ")

5. Explain the use of the "transformed catenary," and determine its equation.

Given the span of an arch 128 ft., the rise 32 ft, the height of the masonry over the crown (y_o) 8 ft., the weight of the masonry per cubic ft. 130. lbs; determine the transformed catenary, and find the amount and direction of the thrust at the abutments; also find the curvature of the arch at the abutments and crown.

6. State the characteristic property of the hydrostatic arch. If the extrados is horizontal shew that the horizontal and vertical loads upon an arc measured from the crown to a point at a depth y below the extrados are $\frac{w}{2} \cdot (y^2 - y_o^2)$ and $w.y_o.\varsigma_o.\ sin\ i$, respectively $y°$ to being the depth at the crown, ς_o the radius of curvature at the crown, w the specific the material, and i the slope at the end of the arc?

7. Shew that the bending moment at any point of the axis of an arched rib is proportional to the vertical distance of that point from the linear arch; also if d be the distance, y the ordinate of the point in the axis to the horizontal springing line, I the moment of inertia of the section of the rib at the point, and if the rib be hinged at both ends, deduce the relation,

$$\Sigma\left(\frac{d.y}{I}\right) = 0$$

it being assumed that the span is invariable.

The axis of an arched rib hinged at both ends, of 80 ft. span and 16 ft rise, is a parabola. A weight of 3 tons is concentrated at the end of the 2nd, 3rd, 4th and 6th divisions from the left support of eight equal horizontal divisions. Draw the linear arch, and determine the maximum flange stresses in the rib, which is of a double-tee section and 2 ft. deep Also determine the horizontal thrust induced by a variation of 100 degrees from the mean temperature.

8. Carefully explain the process of designing an arched rib.

B.A. Sc. ORDINARY EXAMINATIONS.

HYDRAULICS (*Paper I*).

THURSDAY, APRIL 17TH.—MORNING, 9 A.M.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. Explain the meaning of the terms, *co-efficient of contraction*, *co-efficient of velocity*, and *co-efficient of discharge*.

A jet issues horizontally from a small orifice in the vertical side of a cistern 10-ft. below the surface, which is kept at a uniform level, and it is observed that at a horizontal distance of 13.7-ft. from the plane of the orifice, the depth of the axis of the jet below the axis of the orifice is 5-ft., determine the co-efficient of velocity.

2. A fluid, of specific weight w, escapes from a large closed vessel in which the pressure is p into the atmosphere (*pres.* $= P$). Assuming that the motion within the vessel is insensible, and neglecting the variations of velocity due to variations of level, shew that the velocity (v) of the issuing fluid is given by the equation,

$$\frac{v^2}{2g} = \frac{p-P}{w},$$

and determine in terms of p, P, and w, the discharge, the momentum, and the energy per unit of time. Hence, if the above equation holds for the efflux from two orifices, the one in the water space and the other in the steam space of a closed boiler, prove that:

$$\frac{\text{he vely. of steam jet}}{\text{the vely. of water jet}} = \sqrt{\frac{w}{s}} = \frac{\text{quantity of water jet}}{\text{quantity of steam jet}} = \frac{\text{energy of steam jet}}{\text{energy of water jet}}$$

and that momentum of water jet = momentum of steam jet, s being the specific weight of the steam.

3. Obtain an expression for the discharge over a weir when the velocity of approach is taken into account.

The water in a semi-circular channel of 20-ft. diar. is 5-ft. deep; the *virtual* slope of the channel is 1 in 500; the co-efficient of friction = .0064; find the discharge across a plane perpendicular to the direction of flow, and also find the height of the dam which will cause the water to rise to the top of the channel.

4. State the laws of fluid friction and add explanatory notes.

It is required to tow an iron caisson against a current running at the rate of 3 miles per hour. The up-stream face of the caisson is vertical, is 50-ft. wide, and is immersed to a depth of 10-ft. If the caisson moves along at the rate of 2-miles an hour calculate the resistance to motion, the coeff. of friction being .00489. Also determine the power of the tug, assuming its efficiency to be 50 per cent.

5. A pipe of diar. D and length L discharges a given quantity of water in each unit of time. If, instead of this pipe, we substitute a system of pipes, viz., one of diar. D for the first half of the length and three each of diar. $\frac{D}{3}$ for the remaining half, shew that the head consumed by friction in the latter case is *forty-one* times as great as that consumed in the first case.

Also find the diar. of the three equal pipes so that the head consumed in each case may be the same.

(The *loss of head due to curvature, etc., is neglected*.)

6. Three reservoirs A, B, C, are connected by the pipes Oa ($=l_1$), $O\,B$ ($=l_2$), $O\,c$ ($=l_3$). The quantities of water flowing through these pipes in each unit of time, and the virtual falls of the pipes being given, it is required to find the corresponding velocities of flow and the diameters of the pipes.

Apply to the following case :—

Thesurface of water in A, B, C is respectively 300, 250, and 150-ft. above datum; $l_1 = 5{,}000$-ft. $= l_2 = l_3$; $Q_3 = 700$ gallons per minute, and $Q_1 = 300$ gallons per minute.

7. Discuss the action of a fountain.

The pipe leading to a fountain is 200-ft. long and 2-ins. in diar. The co-efficient of resistance for the mouthpiece is $\frac{1}{2}$. To what height will a $\frac{3}{4}$-in. jet rise under a head of 40 feet?

8. A fixed curved vane receives a jet of water without shock. Shew that the pressure on any area of the vane is equal in magnitude and opposite in direction to the force required to cause the deviation of so much water as rests on that area, and find its value.

If the water impinges upon the vane with a velocity of 10-ft., per sec., and if the vane moves in the direction of the entering water with a velocity of 5-ft per sec., find the total pressure on the vane, which is 12-ins. wide, is circular in form, and subtends an angle of 60° at the centre.

B.A. Sc., ORDINARY EXAMINATIONS.

HYDRAULICS (*Paper II.*)

THURSDAY, 17TH APRIL :—AFTERNOON, 3 P.M.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. Explain how you would determine the quantity of water on an overshot wheel at a given time.

An overshot wheel 5-ft wide, 30-ft. in diar., having a 12-ins. crown and 72 buckets, receives 10-cubic-ft of water per sec., and makes 5 revolutions per minute. Determine the deviation from the horizontal at which the water begins to spill, and also the corresponding depression of the water surface?

2. Shew how to find the impulsive effect of the mass of water driving an overshot wheel, and prove that under the most favourable conditions, the impulsive effect is only one-half of the available effect.

3. Describe a Sagebien wheel, and point out its advantages.

4. An undershot water-wheel with straight floats works in a straight rectangular channel of the same width as the wheel, viz., 4-ft. The steam delivers 28-cubic-ft of water per sec., and the efficiency is 1-3. Find the relation between the up-stream and down-stream velocities. If the velocity of the inflowing water is 2-ft per sec., find the velocity on the down-stream side and determine the mechanical effect of the wheel, its diar. being 20-ft. the diar. of the gudgeons being 4-ins. and the coeff of friction .008.

5. Shew that the useful effect of a *reaction* wheel increases with the linear velocity of the end of the discharging pipe, and determine the percentage of available effect *lost* where the head equivalent to the velocity is (1).—equal to the head of water driving the wheel, (2).—twice that head, 3.—four times that head.

6. Describe an *outward flow* turbine, and find its efficiency in terms of r_1, r_2, β, γ, assuming that the pressure at the inlet and outlet points is the same.

The efficiency of an outward flow turbine of 27 H. P., is $\frac{3}{4}$, and the *available* fall (=H) is 44-ft, determine(*a*).—the speed of the wheel (*b*).—the vane angles, (*c*). —the velocity of the water entering and leaving the wheel (*d*).—the radii of the wheel, the depth of the crown being one-ft.

(Assume *radial* velocity at inlet = $\frac{1}{4}\sqrt{2gH}$, and at outlet = $\frac{1}{6}\sqrt{2gH}$.)

B.A. Sc. ORDINARY EXAMINATIONS.

THEORY OF HEAT AND THE STEAM-ENGINE (*Paper I*).

SATURDAY, 19TH APRIL :—MORNING, 9 A.M.

Examiner,..... .....HENRY T. BOVEY, M.A., C.E.

(1). Explain the meaning of the terms *specific heat*, and *capacity for heat*.

x grammes of metal at t_1 ° C, are plunged into a copper calorimeter containing y grammes of water at t_2° C giving a resulting temp. of T° C. Determine the mean specific heat of the metal between T°C, and t_1°C. the capacity for heat of the calorimeter being equal to that of 10 grammes of water.

(2). What is meant by the adiabatic and isothermal curves of any substance? Write down the equations of the adiabatic and isothermal curves for air.

10 cubic feet of air at a temp. 250° F. and a pressure of 19.98 lbs. per sq.-in. expand along an isothermal to a pressure of 14.7 lbs. per sq.-in. The air is then cooled and compressed adiabatically to the original temp. and pressure. Determine the work done by the air (1)—if the cooling is effected at constant volume, (2)—if at constant pressure.

(3). What is meant by *dry steam, saturated steam, superheated steam?*

What is meant by the statement that "the specific heat of steam is negative?" What practical bearing has this fact in connection with the steam-engine?

(4). Give a formula connecting the volume (v in. cubic ft.) and pressure (p. in. lbs. per sq.-in.) of 1 lb. of saturated steam. The pressure of steam at 212° F. is 14.7 lbs. per sq.-in. and the weight of one cubic ft. of steam is .038 lbs.; find the weight of a cubic foot of steam at a pressure of 250 lbs. per sq. in.

(5). Examine whether the evaporation of a given weight of steam at a pressure of 250 lbs, per sq.-in. requires the expenditure of more or less heat than the evaporation of the same weight at a pressure 150 lbs. per sq.-in.

6. Show that of all engines which transform heat into work by a cyclical process, all those which are reversible give off the same and a minimum amount of heat to the refrigerator, whatever their construction may be Also determine the amount of heat taken up and given off by a reversible engine in order to do a unit of work.

7. Explain how the laws of Thermo-dynamics enable us to establish a scale of absolute temperature, and compare its zero point with that of the centesimal thermometer.

8. The cylinder of a non-condensing engine has a cross-section of 1.8 sq-ft. and a stroke of 3-ft.; the initial pressure of the steam is $3\frac{1}{2}$ atms., and the number of revolutions per minute is 24. Find the H. P. of the engine and calculate the amount of water required per stroke to condense the steam coming from the cylinder.

Determine also the power and the amount of water required, when a condenser is added and the steam is cut off at $\frac{1}{3}$rd of the stroke, (the pressure in the condenser = $\frac{1}{4}$ atms per sq.-in.) ($log_e 3 = 1.0986$)

9. Explain the principle of the Indicator? What advantage is gained (1) by diminishing the weight of the reciprocating parts (2) by causing the pencil to move through a wider range than the piston?

10. Draw the indicator diagrams you might expect in the two cases in Question 9, and also shew the alterations in the diagram for the expansive engine which would result from (*a*).—the valve rod being too short, (*b*).—the steam lap being too small, (*c*).—leakage into the exhaust, (*d*).—the throttling of the steam?

11. What advantage is to be expected from a compound engine?

For the expansive engine in Question 9 is to be substituted a Woolf engine of the same power. The number of revolutions per min., the initial pressure, the pressure in the condenser, and the length of stroke are also to be the same. Find the sectional area of the low-pressure cylinder whose volume is to be twice that of the high-pressure cylinder. ($log_e 2 = .6931$).

B.A. Sc. ORDINARY EXAMINATIONS.

THEORY OF HEAT AND THE STEAM-ENGINE, (*Paper II.*)

SATURDAY, 19TH APRIL:—AFTERNOON, 3 P.M.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. Describe the modern form of air-pump and condenser.

The temp. of the condenser is 35 C., of the injection water 12° C and the pressure in the condenser is $\frac{1}{10}$th atms; the volume of air in the injection water is $\frac{1}{14}$th of the volume of the water, and it may be assumed that the volume of uncondensed steam is equal to the volume of air brought in by the injection water. Show that if the engine is worked at a medium pressure, the ratio of the steam to the equivalent water being 448, the volume of the air-pump is $\frac{3}{10}$ths of the volume of the steam cylinder.

2. Describe the conditions governing the port-area of a slide-valve.

The eccentricity of an ordinary three-ported slide-valve is 3½-ins., the steam-lap is 1-in., the angle of advance is 30°, the width of the steam port is 1½-ins. the sectional area of the steam-cylinder 3-sq-ft., the length of stroke is 30-ins., the number of revolutions per minute is 60; determine the port-area, the lead, and the point of cut-off. The steam is released after the piston has completed $\frac{9}{10}$ths of the stroke, find the exhaust lap.

3. Describe the Meyer expansion valve. What circumstances are to be taken into account in setting the expansion eccentric?

An expansion valve of this type with a 4-ins. eccentricity is added to the engine in the preceding question, and the two valves are to cut off steam simultaneously. How should the expansion valve be set? Trace the action of the steam throughout one revolution.

4. Describe, with sketches, Stephenson link motion with crossed rods, and explain how a link is raised and lowered during working.

5. Give a brief account of the plans usually followed in the construction of large fly-wheels.

Find the weight of a fly-wheel of an 80 horse-power engine, also find the sectional areas of the rim and an arm, the wheel having eight arms. *Data*: coefficient of steadiness= $\frac{1}{3\frac{1}{2}}$, length of crank=1-5th. of length of connecting rod =1-5th. of length of mean radius of rim; diar of cylinder = 18-ins.; length of stroke = 42-ins.; number of revolutions per minute = 24.

6. What is the object of a governor? How is this object attained? What advantage is gained by loading the governor? Should the "load" be, obtained by increasing the weight of the balls? If not, how should the loading be effected? Illustrate your answer by a sketch.

In order to increase the power of an ordinary Watt governor the sliding sleeve is loaded with a weight of 360 lbs.; the weight of each ball is 120-lbs., find the number of revolutions per minute, the vertical distance between the balls and the point of suspension being 24-ins, and between the sliding sleeve and the point of suspension 32-ins. Also it requires a force of 5-lbs. to move the valve, and a ½-in. displacement of the valve corresponds to a ¼-in. displacement of the sleeve, find the relative increase of velocity necessary to cause the balls to rise.

7. What is the usual quantity of air supplied to coal? How is the temperature of the products of combustion affected by the presence of wate either in the air or in the coal?

B.A.Sc. AND THIRD YEAR ADVANCED COURSE.

TUESDAY, 22ND APRIL: — MORNING, 9 A.M.

APPLIED MECHANICS. (*Paper I.*)

Examiner,..... .....HENRY T. BOVEY, M.A., C.E.

1. Discuss the oscillatory motion of a weight at the end of a verticaly elastic rod whose mass may be neglected.

A metal rod ¼-sq.-in. in sectional area and 5-ft. long hangs vertically with its upper end fixed, and carries a weight of 18 lbs. at the lower end. On striking the rod it emitted a musical note of 264 vibrations per sec. (the middle C of the pianoforte); find the co-efficient of elasticity of the metal, the weight of the rod being neglected.

2. Discuss the distribution of stress in any given plane of a loaded rectangular beam under combined bending and shearing actions.

A beam of rectangular section, 14-ins. wide, 15-ins. deep, and weighing 32-lbs. per cubic ft., rests upon supports 10-ft. 6-ins. apart, and carries a uniformly distributed load of 127,606-lbs. Find the greatest intensities of thrust, of tension, and of shearing stress at a point half-way between the neutral axis and the upper skin in the section at the quarter-spans.

3. Design a cast-iron beam of *uniform strength*, 20-ft. long, 20-ins. deep at the centre, to carry a uniformly distributed load of 200,000-lbs.

4. Compare the strengths of five equally loaded beams of equal length, the forms of the several sections being a regular hexagon with a diagonal vertical, a regular hexagon with a diagonal horizontal, a square with a diagonal vertical, a square with a side horizontal, and a circle.

5. Enunciate the Theorem of Three Moments, and apply to the following case:—

A certain bridge of 700-ft. length consists of three spans, of which the centre is 300-ft., and the two side spans are each 200-ft. The dead load upon each main girder is 1250 lbs. per lineal ft., and one of the side spans is covered with a proof load equivalent to 2500-lbs. per lineal ft. for each main girder. Required the reactions at the supports, the points of inflexion in each span, and bending moment and shearing force diagrams.

How far must the third support from the loaded end be lowered so that the pressure on it may be just zero?

6. A strut is subjected to loads varying from a maximum compression to a minimum compression. Explain how allowance is to be made for buckling.

The load upon a solid wrought-iron column 12-ft. in length varies from a compression of 25-tons to a compression of 12-tons, determine its sectional area.

Primitive strength = 30,000 lbs. per sq.-in., *vibration strength* = 15,000 lbs. per sq.-in.; factor of safety = 3.

7. The two ends of a strut are fixed in the same vertical line. Prove that the least value of the thrust which will bend the strut laterally is,

$$P = 4.\ E.\ I.\frac{\pi^2}{l^2},$$

and state all the assumptions you make.

B. A. Sc. ADVANCED COURSE.

APPLIED MECHANICS. (*Paper II.*)

MONDAY, APRIL 21ST :—MORNING, 9 A.M.

Examiner,..... .....HENRY T. BOVEY, M.A., C.E.

1. Explain the process of determining the stresses in the various members of a draw-bridge 300-ft. long bearing on a point at the centre, and shew how it differs from that adopted when the same span is bridged by two independent spans of 150-ft. each.

For the same live load which will be the heavier, the truss for the draw of 300-ft., or the two 150-ft. trusses?

2. Deduce the three "*equations of condition*" for an arched rib with both ends absolutely fixed.

A parabolic rib of 100-ft. span and 20-ft. rise, supports a load of 2-tons at a point 20-ft. from the centre; draw the equilibrium polygon, and determine the maximum thrust upon the rib.

3. In a loaded arched rib, show how to determine—(1) The position of the point at which the intensity of the stress for any given distribution of the load is a maximum, (2) The distribution of the load that makes the intensity an absolute maximum, (3) The value of the intensity.

4. Deduce the *general* equations, giving the bending-moment and shearing-force at any point of a loaded arched rib, and discuss the conditions which will enable you to find the value of the "constants" occurring in the equations.

A parabolic arched rib of 100-ft. span and 20-ft. rise is fixed at the springings and at the crown. The uniformly distributed load upon one-half of the arch is 100-tons, and upon the other 200 tons. Find the B. M. & S. F. at 25-ft. from each end.

B.A. Sc. ADVANCED COURSE.

HYDRAULICS.

THURSDAY, APRIL 17TH:—MORNING, 9 A.M.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. In the vertical side of a vessel is a somewhat large orifice, symmetrica. with respect to a vertical line, having its upper end in the surface of the water and its base horizontal. The discharge is proportional to the square of the height of the orifice. Find the form of the orifice.

2. A vessel in the form of a paraboloid of revolution has a depth of 16-ins., and a diar. of 12-ins. at the top. At the bottom is an orifice of 1-sq in. sectional area. If water flows into the vessel at the rate of $\frac{1}{2}$-cubic ft. per minute, to what level will the water rise, and how long will it take to reach this level? If the supply is now stopped how long will it take to empty the vessel?

3. Assuming the viscous theory, discuss the distribution of velocity in a vertical longitudinal section of a stream.

If $v_{\frac{1}{2}}$ be the mid-depth velocity, and v_m the mean velocity, prove that for any position of the axis of the velocity-curve,

$$v_{\frac{1}{2}} - v_m = \tfrac{M}{12},$$

where $M = \dfrac{w \,.\, i \,.\, h^2}{2\,k}$, w being the specific weight of the water, i the slope of the stream, h its depth, and k the co-efficient of viscosity.

What practical use has been made of this property?

4. Deduce the fundamental differential equation of steady varied motion, and apply to a stream flowing in a rectangular bed of constant slope and indefinite width.

Discuss the case in which $h > \dfrac{u^2}{2\,y}$ and $< H$, u being the mean velocity, and H the constant depth of a stream flowing uniformly with the velocity u.

5. Shew that the discharge of an artesian well is proportional to the thickness of the filtrating stratum, to its permeability, and to the head over the point of discharge. State all the assumptions you make, and explain wherein the theory is not in accordance with practical experience.

6. The whirling and radial velocities of the water within a turbine at two different points are w_1, v_1, and w_2, v_2; the distances of the points from the axis are r_1, and r_2; determine the difference of pressure at the two points.

7. Design an inward flow turbine of 60 horse-power to pass 12-cubic ft. of water per second.

Data:—Efficiency $= \frac{3}{4}$; radial velocity at outer circumference = radial velocity at inner circumference $= \sqrt{\text{available fall}}$; depth of outlet orifices $= \frac{1}{10}$ exterior radius

B.A. Sc. ADVANCED COURSE.

THEORY OF HEAT.

WEDNESDAY, APRIL 23RD :—MORNING, 9 A.M.

Examiner,..... .....HENRY T. BOVEY, M.A., C.E.

1. Between the volume, pressure and temperature of a substance a relation exists, dependent upon the nature of the substance; determine the partial differential co-efficients of any one of the three with regard to the other two.

2. Explain the meaning of the terms *internal heat*, *energy*, *entropy*.

If the specific heat of a substance is c_p at constant pressure and c_v at constant volume, and if l is the latent heat dilatation, prove the relations,

$$\frac{d\,l}{d\,t} - \frac{d\,c_v}{d\,v} = \frac{1}{J}\cdot\frac{d\,p}{d\,t}$$

$$\& \quad \frac{d\,c_p}{d\,p} - \frac{d\,h}{d\,t} = \frac{1}{J}\,\frac{d\,v}{d\,t}$$

where $h = \frac{p}{J}\frac{d\,v}{d\,p} + \frac{d\,U}{d\,p}$, U being the internal heat.

3. Prove that in a reversible cyclical process the total value of all the transformations must be equal to nothing.

4. A mixture of steam and water expands adiabatically. How is the process affected by the proportion of steam and water in the mixture?

Two boilers of equal volume are the one half full of water and half-full of steam at 225° F, the other one-third full of water and two-thirds full of steam at 350° F; determine the temperature and the ratio of steam to water in the new mixture obtained by making a communication between the vessels (the latent heat = 1434.474—·695T).

5. Describe the action of Ericsson's hot-air engine.

In one of these engines,

the temperature at which the air is expanded = 420°.
" " " compressed = 120°.

the rate of expansion at constant temperature = 1.5; the length of stroke = 5 ft., the number of revolutions per minute = 12; determine the H. P. of the engine and its efficiency.

6. How would you estimate the delivery and consumption of an Otto and Langen gas-engine?

7. Explain the action of the Giffard injector.

Discuss the application of the principle of the injector in the case of (*a*) the ejector-condenser, (*b*) the locomotive exhaust. (*c*) steam-blowers.

8. To what extent does the thickness of the boiler-wall regulate the transmission of the heat between the hot-gases and the water? Mention any other circumstances which regulate the rate of transmission.

BURLAND SCHOLARSHIP.

(Open to Students entering the Second Year.

INORGANIC CHEMISTRY (*First Paper.*)

THURSDAY, SEPTEMBER 27TH :—AFTERNOON, 2 TO 5.

Examiners, ... { G. P. GIRDWOOD, M.D. / B. J. HARRINGTON, B.A., Ph.D.

1. A kilogramme of Argentiferous Lead containing half of one per cent of Silver is cupelled. What weight of Litharge is produced, and what volume of Oxygen absorbed in the operation?

2. In order to neutralise a solution of Caustic Soda five grammes of crystallised Oxalic Acid were required. What weight of Sodium does the solution contain?

3. Give fully the information conveyed by the following equation:

$$K_2 Mn_2 O_8 + 5 C_2 H_2 O_4 + 3 H_2 SO_4 = 2 Mn SO_4 + K_2 SO_4 + 8 H_2 O + 10 CO_2.$$

4. State fully what takes place when concentrated Sulphuric Acid is heated with each of the following substances: Potassium Ferrocyanide, Oxalic Acid, Alcohol, Common Salt, Mercury.

5. How would you prepare Caustic Potash from Potassium Carbonate? The formula of Caustic Potash may be written K-O-H, or K-Ho. What two views of the constitution of the substance are indicated by these formulæ?

6. Distinguish between oxydation and reduction, giving several examples of each process. Why is Chlorine often spoken of as an oxydising agent?

7. Give the properties of Ozone. Why is its molecule supposed to contain three atoms of Oxygen?

8. Give the properties and uses of the metals Aluminum and Platinum.

9. What do you understand by the following terms:—Equivalent Weight, Isomorphism, Atomicity, Nascent State?

10. Give graphic formulæ for Hydric Sulphate and Argentic Nitrate.

BURLAND SCHOLARSHIP.

ELEMENTS OF ORGANIC CHEMISTRY (*Second Paper.*)

FRIDAY, SEPTEMBER 28TH :—AFTERNOON, 2 TO 5.

Examiners, ... { G. P. GIRDWOOD, M.D. / B. J. HARRINGTON, B.A., Ph.D.

1. Distinguish between an Amine and an Amide.

2. How may pure Acetic Acid be obtained? The formula of the acid is sometimes written $\left.\begin{matrix} C_2H_3O \\ H \end{matrix}\right\} O$. Explain this.

3. Give the general formulæ of the Phenyl Series and the Acetylene Series of Hydrocarbons, and describe one member of each.

4. State what you know (*a*) concerning the products of the decay of Organic Substances, and (*b*) concerning the products of the destructive distillation of wood.

5. Explain the constitution of Glycol, Picric Acid, and Ethyl Mercaptan.

6. How may Benzol be obtained from Benzoic Acid, Dextrin and Sugar from Starch, and Alcohol from Sugar.

7. Describe the continuous Etherification process, giving equations.

8. Give the formulæ of Methyl Aldehyde, Amyl Alcohol, Cellulose and Tartaric Acid.

9. How are Essential Oils commonly prepared? State what you know concerning their composition.

10. Give the formula and properties of Napthalin.

BURLAND SCHOLARSHIP.

PRACTICAL CHEMISTRY.

SATURDAY, SEPTEMBER 29TH :—AFTERNOON, 2 TO 5.

Examiners, ... { G. P. GIRDWOOD, M. D. / B. J. HARRINGTON, B.A., Ph. D.

Detection of Metal and Acid in Salts. The following substances were given :—

1. Potassium Tartrate.
2. Sodium Acetate.
3. Barium Carbonate.
4. Zinc Sulphate.
5. Lead Nitrate.
6. Stannic Chloride.

FIRST YEAR.

CHEMISTRY.

MONDAY, APRIL 7TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, PH.D., F.G.S.

1. Describe any experiments illustrating the properties of Ammonia gas.

2. How would you distinguish a Chloride from a Bromide and a Bromide from an Iodide?

3. Give tests for the detection of Orthophosphoric, Nitric, Sulphuric, and Thiosulphuric Acids.

4. Give the formulæ of Phosphine, Alcohol, Acetic Acid, Chloroform, and Dextrin.

5. How would you define (*a*) a Metal (*b*) an Alloy, (*c*) an Amalgam?

6. Explain the use of Cobalt Nitrate as a reagent.

7. Name the metals of the Third Group, and state how you would distinguish them when in solution.

8. How would you distinguish a Stannous Salt from a Stannic, a Mercurous from a Mercuric, and a Ferrous from a Ferric?

9. Argentic Nitrate is added to a solution containing 2.3 grammes of NaCl. until no further precipitation takes place. What weight of AgCl. is produced?

10. Name the substances indicated by the following formulæ:—

$K\,FeCy_6$, H_4NCl, H_4SiO_4, Fe_3O_4, Na_2HPO_4, $C_{12}H.O_{11}$.

CHEMISTRY COURSE.

SECOND YEAR. (*Chemistry Course*).

CHEMISTRY.

MONDAY, APRIL 7TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, PH.D., F.G.S.

1. A salt is heated before the blowpipe on charcoal and a metallic bead obtained. How would you ascertain whether the bead be Silver, Lead, Bismuth, Antimony or Tin?

2. What is the action of strong Sulphuric Acid upon Sulphites, Cyanides, Peroxides, Oxalates, Hypochlorites, Nitrates and Chlorates.

3. How would you detect the presence of lead, cadmium, arsenic and iron in a sample of spelter? How determine the quantity of iron

4. What solvents would enable you to separate the constituents of Gunpowder?

4. How would you ascertain whether a specimen of Limestone is Magnesian or not?

6. Citric Acid is sometimes adulterated with Tartaric Acid. How could such an adulteration be detected?

7. Give tests for the detection of the following acids: Benzoic, Ferrocyanic, Acetic, Oxalic, Boric.

8. A salt incrustation from the dry plains of the North West was found to consist largely of Sodium Sulphate with a little Potassium Sulphate. Supposing these to be the only constituents, how would you estimate the quantity of each?

THIRD YEAR. (*Mining Course*).

CHEMISTRY AND ASSAYING.

MONDAY, APRIL 7TH :—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, PH.D., F.G.S.

1. Describe the qualitative analysis of an insoluble Silicate containing alkalies.

2. In testing a solution for metals, Hydrochloric Acid is added and a white precipitate produced. Apart from Silver, Lead and Mercury, what substances might this indicate?

3. How would you detect the presence of small quantities of Nickel in a sample of Pyrrhotite?

4. Name the metals of the Fifth Group (Fresenius). How are they separated from those of the Sixth Group and also from one another?

5. How would you detect the presence of Manganese and Phosphoric Acid in an Iron Ore?

6. Describe Eschka's method for the determination of Sulphur in Coal.

7. Give any method for the assay of Lead Ores in the wet way.

8. Describe the battery assay for Copper.

9. How may the proportion of Ferrous Oxide in a specimen of Magnetite be ascertained?

Practical examination in the Laboratory, April 17th.

THIRD YEAR. (*Mining Course*).

MINING.

WEDNESDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiner,..... .....B. J. HARRINGTON, PH.D., F.G.S.

1. What do you understand by prospecting? Point out the importance of a knowledge of the geology of any region which is to be prospected.

2. Distinguish between winning, preparatory working, and exploitation. Also between underhand and overhand stoping.

9. What are the usual dimensions of levels? What form is often given to the end of the level (*a*) when ordinary powder is used for blasting, and (*b*) when more powerful explosives are employed? What inclination should be given (*a*) to an adit-level and (*b*) to an underground tramway?

4. What are the best kinds of timber for use in mines? Under what circumstances are they most durable? Should the timber be employed in the round or square? With the bark on or off? Describe any method of imbering a gallery.

5. Distinguish between beds and veins, giving examples of deposits of both kinds occurring in Canada. Explain why beds are likely to be deposits of more uniform character than veins.

6. Describe an ordinary form of flume employed in California for bringing supplies of water to regions where Hydraulic operations are to be carried on. Point out also the advantages of iron pipes as compared with flumes. How are the pipes joined when they are intended to withstand great pressures? How rendered water-tight?

7. Give a description of the working of thick seams of coal (*a*) as practised in Schuylkill County, Pennsylvania, and (*b*) as carried out at Kladno, in Bohemia.

8. What are shaft-pillars? Upon what does their size depend?

9. Describe the sinking of a shaft in loose ground (*a*) by piling and (*b*) by spilling.

10. Describe any form of man-engine, and institute a comparison between the relative efficiency of man-engines and guided cages in raising and lowering miners in shafts.

NOTE.—The answers should be illustrated by free-hand drawings.

B.A. Sc. EXAMINATION. (*Mining and Chemistry Courses.*)

METALLURGY.

TUESDAY, APRIL 15TH :—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, PH.D., F.G.S.

1. Distinguish between Air-reduction and Iron-reduction processes for the smelting of Lead ores, and describe one example of each.

2. What are the chemical and physical properties of Copper? What the principal varieties of commercial Copper? What the impurities which they are liable to contain.

3. Describe Von Patera's method of extracting Silver. In what cases is it particularly applicable?

4. Describe the extraction of gold from Auriferous Mispickel by Plattner's process?

5. Describe any method for the extraction of Mercury from Cinnabar. What are the principal impurities in commercial Mercury? How may the Mercury be freed from them?

6. How are the physical properties of Cast-iron effected by the presence of each of the following impurities:—Sulphur, Phosphorus, Silicon, Titanium, Vanadium, Copper?

7. Describe the conversion of a Puddled Ball into Merchant Iron.

8. What means are ordinarily employed for raising the charges to the mouth of a blast furnace?

MASTER OF APPLIED SCIENCE.

LITHOLOGY (INCLUDING MICROSCOPIC CHARACTERS OF MINERALS AND ROCKS.)

TUESDAY, APRIL 29TH :—MORNING, 9 TO 1.

Examiner,.....B. J. HARRINGTON, B.A., PH.D.

1. How would you distinguish between gas-, liquid-, and glass-cavities in thin sections of minerals? Explain the deductions of Sorby, based upon the relative size of liquid-cavities and their bubbles.

2. What are the principal phenomena to be observed in the study of thin sections of minerals in convergent polarized light?

3. Give an outline of Szabo's method for distinguishing the Feldspars, stating your opinion as to its value.

4. Describe Thoulet's apparatus for separating the constituents of rocks, and explain the manner of using it.

5. Give the optical characters of Sodalite, Zircon, Leucite and Tourmaline, as seen in thin sections.

6. Describe Boricky's method of distinguishing minerals in rocks by means of Hydrofluo-silicic acid, and discuss its value.

7. Distinguish between the first and second phases of rock consolidation, and also between granitoid and trachytoid structures.

8. Give Fouqué and Lévy's classification of minerals which are important as rock constituents.

9. Into what groups does Rosenbusch divide the Quartz Porphyries? Give the leading characteristics of each group.

10. What rocks are comprised in the families of Syenite and Mica-Diorite? Give a brief account of the structures and classification of each family.

11. What rocks are included by Rosenbusch under the general term Peridotite? Describe any two of them.

12. Give a sketch of the methods employed in distinguishing the Feldspars optically.

13. Define each of the following terms:—Elasticity axis, optic axis, bisectrix, extinction angle. How is an extinction angle measured?

MASTER OF APPLIED SCIENCE.

INORGANIC CHEMISTRY.

SATURDAY, APRIL 26TH:—MORNING, 9 TO 12.

Examiners, ... { ROBERT CRAIK, M.D. / B. J. HARRINGTON, B.A., PH.D.

1. Give a brief statement of the investigations of Kopp, with reference to the Atomic Heat of the elements.

2. Give examples of volatile Methyl compounds of the metals, and explain the value of such compound in determining the quantivalence of elements.

3. What is the quantivalence respectively of Silver, Lead and Iron? What the probable constitution of the Chlorides of these metals

4. What is Prout's Hypothesis? Mention any facts for or against its validity. Explain also the Periodic Law of the Elements.

5. Give an outline of the principal observations which have been made with regard to the occlusion of Hydrogen.

6. Distinguish between Monosilicates, Disilicates and Trisilicates, giving examples of each class. From what hypothetical acids may we consider the Monosilicates to be derived?

7. When Silver Chloride is digested with solution of Potassium Bromide the Silver is converted into Bromide. In like manner Silver Bromide and Silver Chloride are each converted into Iodide by treatment with Potassium Iodide. How are these facts taken advantage of in the indirect estimation of Chlorine, Bromine and Iodine in a solution?

3. How does Osmium occur in nature? What are its properties? What Oxides does it form? Describe the most important one.

7. Describe Weldon's process for the regeneration of Manganese Dioxide from Chlorine residues.

10. Illustrate, by means of structural formulæ, the relations between any of the polymeric compounds of Cyanogen.

11. A quantity of Barium Dioxide is gradually added to water through which a current of Carbon Dioxide is being passed. If 39.4 grammes of Barium Carbonate are formed what volume of Oxygen, at 14° C, will be set free on boiling the solution of Hydrogen Dioxide?

12. What are the principal facts bearing upon the dissociation of Sal-ammoniac?

13. What are Cobaltamine Salts? Give their principal characteristics.

MASTER OF APPLIED SCIENCE.

ANALYTICAL CHEMISTRY.

MONDAY, APRIL 28TH:—AFTERNOON, 2 TO 6.

Examiners,..... { ROBERT CRAIK, M.D.
B. J. HARRINGTON, B.A., PH.D.

1. Describe fully the quantitative analysis of a specimen of Fahlerz according to the method of Rose.

2. In an indirect estimation of the quantities of Strontium and Calcium in a solution 2 grammes of the mixed Carbonates were obtained. The quantity of Carbon Dioxide in this precipitate was 0.7383 grm. What proportions of Calcium and Strontium were present in the solution?

3. How would you detect the presence of small quantities (*a*) of Chlorine, and (*b*) of Titanium Dioxide in Silicates? How determine the exact quantities?

4. Two organic substances are found to have respectively the following percentage composition. Calculate the formula of each, and state what the substances are :—

	A	B
Carbon,	42.06	31.95
Hydrogen,	6.48	4.05
Oxygen,	51.46	64.00
	100.00	100.00

5. How would you estimate (*a*) the quantity of Phosphoric Acid, and (*b*) the quantity of Fluorine in a sample of Canadian Apatite?

6. What are the principal sources of error in the gravimetric estimation of Sulphuric Acid? What precautions should be taken to ensure accuracy?

7. Describe any method for the valuation of Bleaching Powder.

8. Give the principal reactions employed in the detection of Zirconium, Cerium and Thallium.

9. How would you ascertain whether a sample of Water is unfit for drinking purposes?

10. How does Hydrochloric Acid interfere with the titration of solutions of Iron in Marguerite's process? How may the difficulty be to a certain extent overcome?

SECOND YEAR.

SURVEYING.

THURSDAY, APRIL 24TH :—9 TO 12 A.M.

Examiner,.....C. H. MCLEOD, MA.E.

1. Explain the uses of the sectoral scale and the scale of chords.

2. There is an inaccessible line parallel to which a line through a given accessible point is required. Show how to obtain the required line without the use of an angular instrument. (*a*) Prove your method.

3. How may a line be produced beyond an obstacle by the aid of an angular instrument only?

4. What is the angle between the meridian and *S. W. by W*?

5. Describe the operation of *renewing* the magnetism of a magnetic needle.

6. State the precautions necessary to ensure the greatest available accuracy in the use of the surveyor's compass.

7. Explain the process of balancing a survey. When should it be employed?

8. Suppose the bearing of one line and the length of another, in a closed survey, to be omitted. Show how they can be replaced.

9. How would you find the azimuth of a line from an observation of *polaris* at its greatest elongation? (*a*) Give the formula for the calculation of the azimuth of a star at its greatest elongation. (*b*) Explain how you would determine the precise moment at which the greatest elongation occurs.

10. What are the permanent adjustments of the engineer's transit? (*a*) Describe the adjustment, which may be omitted when it is not necessary, in the use of the instrument, to reverse the telescope?

11. What is the only essential adjustment to the level?

12. Show a form of level notes, and illustrate by example a method of checking the reduction.

13. Given the degree of curvature 4° and the bearings of two lines to be united by the curve, 25° 30' and 56° 45'. Calculate the length of tangents and the length of the curve (*a*) suppose *B. C.* = 27 + 45 and that it is necessary to set the instrument at 29 + 75. Show field-notes for the curve.

SECOND YEAR.

DESCRIPTIVE GEOMETRY.

Examiner, ...C. H. McLeod, Ma.E.

1. Draw 360° of the involute of a circle of 2 in. diameter.

2. Divide the circumference of a circle, by a general method, into three equal parts.

3. Describe an hypocycloid by a generating circle of 2 in. diameter on a directing circle of 4 in. diameter.

4. Project perspectively:—

(*a*) An hexagonal prism when the side of an end is in the horizontal plane and the axis is at 30° to the horizontal.

(*b*) When the object is placed as in (*a*) but the side mentioned is at 30° to the vertical.

(*c*) A right octagonal pyramid is cut by a plane which bisects the axis and contains one side of the base. Find the plane of section and develope the surface of the solid showing section line.

(*d*) A speed pulley of two steps when the faces are at 30° to the horizontal and perpendicular to vertical.

(*e*) When the planes of the pulleys are also at acute angles to the vertical.

5. Project isometrically a solid four-armed cross, the body of the cross to be larger than the arms. Dimensions otherwise, at pleasure.

6. Three adjacent angles of a regular hexagon of 1 in. side are respectively 1 in. 1. 3 in. and 1. 5 in. above the horizontal; find the plane of the hexagon.

7. There are four points A. B. C. and D. which are distant from the vertical respectively 1 in. 1. 5 in., 2 in. and 2.5 in. and from the horizontal 3 in., 1. 5 in. 0. 5 in., and 1. 2 in. Find the traces of the plane containing A B C and also of the plane containing B C D. Find the angle between the planes.

8. Find the projection of a line in the plane A B C, which makes an angle of 30° with the intersection line between the planes A B C, B C D in question 7.

THIRD YEAR.

(Mining and Civil Engineering Courses.)

DESCRIPTIVE GEOMETRY.

MONDAY, MARCH 31ST:—9 TO 12 A.M.

Examiner,..... C. H. MCLEOD, MA.E.

1. One diagonal of an octahedron of 2 in. edge is inclined at 30° and an adjacent edge at 45° to the horizontal; draw plan and elevation; the latter on a plane not parallel to any edge of the solid.

2. Find the plan of a cube of 2 in. side when one face makes an angle of 40° and a diagonal of that face an angle 30° with the horizontal.

3. The apex angles of a cone is 30°. A plane of section which is parallel to two of the generators and inclined to the axis at 10° is 0·2 in. distant from the apex. Construct the hyperbola and draw its asymptotes.

4. Develope one portion of the cone in question 3.

5. A cylinder completely penetrates a cone. The axis of the cone is at 50° to the horizontal, and 30° to the vertical. The projections of the axis of the cylinder are at right angles to the projections of the axis of the cone.

6. A cylinder of 1 in. diameter is parallel to, and its axis 1.5 in. distant from, both planes of projection, find the traces of a plane which touches the cylinder and makes an angle of 30° with the horizontal.

7. A cone contains a sphere, the axis of the cone is inclined so that its plan is at 30° and elevation at 45° to division line. Show plan and elevation of line of contact.

8. A cylinder stands on a plinth and is surmounted by a cone. The plinth is 8 ft. square and 2 ft. thick; the cylinder 6 ft. base and 10 ft. high; the cone has a base of 8 ft. diameter and its altitude is 5 ft. One angle of the plinth is in the foreground and 4 ft. on the left of the spectator and a side makes an angle of 30° with the picture plane. Height of spectator 6 ft. and distance 20 ft. Find the perspective projection.

9. Project perspectively, a pyramid the base of which is a regular pentagon of 2 ft. side and the altitude of which is 10 ft. The axis of the object is 5 feet on the right and 8 ft. within the picture.

10. Prove geometrically that the perspective projections of lines which are parallel vanish in one point, also the truth of the method of employed in the measurement of lines in perspective.

SECOND YEAR.

MECHANICAL WORK.

THURSDAY, APRIL 24TH:—9 TO 12 A.M.

Examiner,.....C. H. McLEOD.

1. Sketch, in vertical section and plan, a pedestal bearing. Give suitable dimensions for a 3 in. shaft.

2. Given the form of the teeth on one wheel, show how to find the proper form of the teeth of another wheel to gear with it.

3. In two epicycloidal wheels with radial flanks the arc of approach it to be equal to p and of recess equal to one-half p. Suppose one wheel to have 24 teeth and the other 12; the smallest being 3 in. in diameter. Show the "path of contact" and the limiting circles for the roots and points of the teeth.

4. If the weakest part of the teeth on the larger wheel in question 3 is along a line at 45° with the axis, from the root of the tooth; calculate the greatest safe stress for $f = 5{,}000$ lbs.

5. Obtain a formula for the ratio $\frac{P}{Q}$ in the worm and wheel where θ is the inclination of the worm thread and ϕ the angle of repose.

6. Make a sketch of a "split-pulley."

7. Illustrate and describe three or more forms of joints for leather belts.

8. Why is the smooth side of the leather turned towards the pulley ; the coefficient of friction being less than for the rough side ?

9. What is shrouding in gear wheels and of what use ?

10. State what you know as to the relative advantages of leather, cotton and rubber belting.

METEOROLOGY.

SATURDAY, APRIL 26TH.—9 TO 12 A.M.

Examiner,.....C. H. MCLEOD.

1. What are the defects to which Rutherford's minimum thermometer are liable ?

2. Discuss the form of a spirit thermometer bulb.

3. What are the special precautions to be observed in the exposure and screening of a thermometer ?

4. How is the amount of heat which reaches the earth from the sun affected by the condition of the atmosphere and the position of the sun ?

5. How does the character of the covering of the earth modify terrestrial radiation.

6. Describe the construction of Adies Marine Barometer.

7. To what atmospheric and geographic conditions is the diurnal range of the barometer supposed to be connected ?

8. What are the conditions which govern the rapidity of evaporation of a water surface ? How does the total yearly evaporation compare with the rainfall ? State, approximately, the amount of rain and snow (melted) which falls in Montreal during a year.

9. How are fogs produced ?

10. What are the causes of rain ? Where should a rain gauge be situated ?

11. Given the force of the wind and its direction at every instant. How would you determine its resultant or mean direction and magnitude ?

12. How does the potential necessary to produce a flash of lightning vary with the length of the flash or "striking distance ?"

13. What is the connection between the height of an aurora and its tint ?

14. What are "Coronae," "Glories," "Halos," "Parhelia ?"

15. To what is cloud coloring due ?

SECOND YEAR MECHANICAL ENGINEERING.

ESSAY.

WEDNESDAY, APRIL 2ND :—9 TO 12.

Examiner,.....C. H. McLEOD.

Write an essay on Riveted Joints, noticing especially the following:—

(*a*) Rivets.

(*b*) Punching and drilling.

(*c*) Forms of joints.

(*d*) Overlap and pitch.

(*e*) Strength of riveted work.

(*f*) Ratio of tearing and shearing areas.

(*g*) Junctions of plates.

(*h*) Cylindrical riveted structures.

(*i*) Taper of boiler plates.

(*j*) Boiler stays.

(*k*) Efficiency of riveted joints.

FIRST YEAR.

FREEHAND DRAWING.

SATURDAY, MARCH 29TH.—9 TO 12 A.M.

Examiner,.....C. H. McLEOD, MA. E.

1. Drawing without a model:—

(*a*). A cube, not less than 2 in. side, above the level of the eye, one side parallel to the picture plane and to the right of the spectator.

(*b*). A pyramid standing on a cylinder which rests on a platform of two steps, below the level of the eye and to the left of the spectator. Indicate by dotted lines how the apex of the pyramid is found.

2. Drawings from the model:—

(*a*). The shafting with pulleys, frame and belt as it appears from your point of view.

(*b*). The cross standing on a square base and resting on a platform as it appears to you.

(*c*). The table with the objects placed thereon.

3. Supposing a spectator standing in the centre of a straight railroad track, illustrate by a diagram the appearance of the telegraph posts, rails, and sleepers.

4. Sketch the Lotus flower as indicated on the blackboard.

THIRD YEAR.

MECHANISM.

FRIDAY, APRIL 11TH :—9 TO 12 A.M.

Examiner,.....C. H. MCLEOD, MA.E.

1. What is the ratio of the velocity of circular to reciprocating motion in simple harmonic motion? Show how to find the velocity ratio, for every position, by graphic solution.

2. Explain the principle which would govern you in placing the pulleys on shafts which are not parallel and which are to be connected by a belt without guide pulleys.—(*a*) The projections of two shafts on a plane parallel to both, meet at an angle of 60°. Find the position of the pulleys, the smallest of which is 20 ins., when the velocity ratio is 4-5.

3. Show, by a sketch, the construction of the anchor escapement used in common clocks, and explain how the swing of the pendulum is maintained. (*a*) What do you understand by "centre of oscillation?"

4. Design a face-cam to give three double vibrations to an arm for each revolution of the cam. The arm is to be at rest at the end of each single vibration for an interval corresponding to one-twelfth of the time of revolution of the cam.

5. A crank communicates an oscillating motion to a slotted link. Obtain an expression for the velocity ratio. (*a*) The crank is 20 in. long, the distance between the centres of motion of crank and link 60 in. When the crank makes an angle of 45° with the line of centres, find the velocity-ratio by a graphic method.

6. Prove that $c^2 = ab$ in the grasshopper parallel motion.

7. Sketch an arrangement of levers and ratchet to push the latter forward at each single vibration of the driving arm.

8. The extreme diameters of a set of speed pulleys are 36 in. and 10 in., and the distance between the centres of shafts 5 ft. Calculate the diameter of the equal pulleys for (*a*) an open belt, (*b*) a crossed belt.

9. What are the necessary conditions to ensure a uniform velocity ratio in toothed gearing. (*a*) There are two equal wheels of 6 in. diameter and 20 teeth with radial flanks. Construct two teeth on one of the wheels for an arc of contact of 1·5 times the pitch. Find the centres of the approximating arcs.

10. There is an epicyclic train of 3 wheels, A has 20 teeth ; B, 25 teeth ; C, 30 teeth. Show by drawings the rotation of each of the wheels in the following positions from the initial point:—90°, 180°, and 240°. (*a*) when the wheel *A* is dead. (*b*) When it makes one revolution for each revolution of the arm.

11. The accompanying diagram was taken from an engine making 60 revolutions per minute. The length of stroke was 36 ins. and area of piston 100 ins. The steam scale 30. What H. P. does the diagram represent.

12. Sketch,—Hookes-joint, the Oldham-coupling, Geneva-stop; the reversing gear of a locomotive engine. Explain the construction of the latter.

THIRD YEAR.

SURVEYING.

WEDNESDAY, APRIL 16TH :—9 TO 12 A.M.

Examiner,.....C. H. MCLEOD, MA.E.

1. What are the sources of error in spirit-levelling? Give some account of these in detail, and state how they may be lessened or eliminated. Give a formula for the limit of discrepancies in duplicate lines of levels.

2. How would you determine the value of one division of a spirit level? How would you test the equality of the divisions ?

3. The distance between two stations *S* and *M* is 23931.6 metres.

At *S* top of pole at *M* has a zenith distance of			87°-34'-34".6
At *M*	"	*S* "	" 92°-34'-57".4
At *M* top of pole above ground			4 72 metres
At *M* telescope	"		1·65 "
At *S* "	"		1·50 "
At *S* top of pole	"		5·77 "

S is 108.87 m. above mean tide. Find elevation of *M*. Log of *R*= 6.8043.

4. At *A* the angle between *B* and *C* was observed with a sextant to be 44°-30'. The zenith distance of *AB* was 75° and of *AC* 95°. Show how to reduce *BAC* to the horizontal. Give all the formulæ you would employ.

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5. Show by a sketch two or more forms of surface and sub-surface floats for current gauging.

6. What are the three classes of signals employed in triangulation surveys? What is the *phase* of a station? Obtain a formula for correction for *phase*.

7. Discuss underground and overground station marks.

8. Describe the measurement of an angle on a secondary triangulation survey. How would the "probable error" of the resulting value of the angle be obtained?

9. AB bears $N\ 10^\circ\ E.$; BC, $S\ 50^\circ\ E.$; AD, $E.$ AB is 10 chains long Find the position of a line parallel to AB which will "part off" one acre.

10. Obtain a formula for calculating areas included between meridians and parallels of latitude.

11. The equatorial intervals of a transit reticule of 5 lines are + 28.907, + 14.421,—0.042,—13 442,—28.841 clamp west. Find the clock time of transit of the mean wire of a star whose declination is 8°-34', the 4th and 5th wires being observed at $19h.40M.$ 21.9 *sec* and 36.5 *sec* respectively. Clamp is east.

12. Prove the formula for the azimuth correction to a transit observation.

13. The observed time of passage of the mean wire of a transit instrument at Montreal on April 14th, 1884, of μ Leonis was by *mean-time* clock $8h.\ 12m.\ 12.34\ sec.$ The errors of the intrument were as follows:— $a = +0.67$; $b = +0.15$; $c - 0.22$; calculate the clock error for local time from this observation.

Faculty of Medicine.

MATRICULATION EXAMINATION, 1884.

LATIN.

SATURDAY, MARCH 29TH.

Examiner, ... H. ASPINWALL HOWE, M.A., LL.D.

NOTE.—Candidates may choose, in this Paper, between Cicero and Virgil.

1. Translate, *without unnecessary change of construction* :—

(*a*) Patria tecum, Catilina, sic agit, et quodammodo tacita loquitur : Nullum aliquot jam annis facinus exstitit nisi per te : nullum flagitium sine te : tibi uni multorum civium neces, tibi vexatio direptioque sociorum impunita fuit ac libera : tu non solum ad negligendas leges ac quæstiones verum etiam ad evertendas perfringendasque valuisti. Superiora illa, quamquam ferenda non fuerunt, tamen, ut potui, tuli : nunc vero me totam esse in metu propter te unum : quidquid increpuerit, Catilinam timeri : nullum videri contra me consilium iniri posse, quod a tuo scelere abhorreat, non est ferendum. Quamobrem discede atque hunc mihi timorem eripe : si est verus, ne opprimar ; sin falsus, ut tandem aliquando timere desinam.

(*b*) Itaque ego illum exercitum et Gallicanis legionibus et hoc delectu, quem in agro Piceno et Gallico Q. Metellus habuit, et his copiis, quæ a nobis quotidie comparantur, magno opere contemno, collectum ex senibus desperatis, ex agresti luxuria, ex rusticis decoctoribus, ex iis, qui vadimonia deserere, quam illum exercitum, maluerunt : quibus ego non modo si aciem exercitus nostri, verum etiam si edictum prætoris ostendero, concident. Hos, quos video volitare in foro, quos stare ad curiam, quos etiam in senatum venire, qui nitent unguentis, qui fulgent purpura, mallem secum suos milites eduxisset : qui si hic permanent, mementote, non tam exercitum illum esse nobis, quam hos, qui exercitum deseruerunt, pertimescendos.

2. Parse and decline *facinus*, *tibi uni*, *valuisti*, *metu*, *increpuerit*, *discede*.

3. Write the degrees of comparison of *multus*, *superior*, *magnus*, *senex utilis*, *similis*. Give the Perfect, Present Infinitive, and Supine of *negligo*, *everto*, *perfringo*, *in repo*, *discedo*, *desino*.

4. Explain the terms Cardinal, Ordinal, Distributive, Multiplicative, as applied to Numeral Adjectives. Give all these forms for *unus*, and also its Adverb.

5. Write short notes explanatory of:—

(*a*) *Taeita* loquitur:—What use of the adjective is this?

(*b*) Non *est ferendum*:—What is the subject of this predicate?

(*c*) *Quotidie* comparantur:—What is the composition of this adverb? Give examples of (1) adverbs formed from nouns, (2) from verbs.

(*d*) Video *volitare*:—By what name are verbs of this class known, and how are they formed? Give an example or two.

(*e*) Si prætoris edictum *ostendero*:—What tense, and why?

VIRGIL.

1. Translate, *without unnecessary change of construction*:—

(*a*) Tres notus abreptas in saxa latentia torquet:
Saxa vocant Itali, mediis quæ in fluctibus, Aras;
Dorsum immane mari summo. Tres Eurus ab alto
In brevia et syrtes urget, miserabile visu,
Illiditque vadis atque aggere cingit arenæ.
Unam, quæ Lycios fidumque vehebat Orontem,
Ipsius ante oculos ingens a vertice pontus
In puppim ferit; excutitur pronusque magister
Volvitur in caput: ast illam ter fluctus ibidem
Torquet agens circum, et rapidus vorat æquore vortex.
Apparent rari nantes in gurgite vasto,
Arma virum tabulæque et Troia gaza per undas.
Jam validam Ilionei navem, jam fortis Achatæ,
Et qua vectus Abas, et qua grandævus Aletes,
Vicit hiems: laxis laterum compagibus omnes
Accipiunt inimicum imbrem, rimisque fatiscunt.

(*b*) Æneas—neque enim patrius consistere mentem
Passus amor—rapidum ad naves præmittit Achaten,
Ascanio ferat hæc, ipsumque ad mœnia ducat.
Omnis in Ascanio cari stat cura parentis.
Munera præterea, Iliacis erepta ruinis,
Ferre jubet, pallam signis auroque rigentem,
Et circumtextum croceo velamen acantho,
Ornatus Argivæ Helenæ; quos illa Mycenis,
Pergama quum peteret inconcessosque hymenæos,
Extulerat, matris Ledæ mirabile donum:
Præterea sceptrum, Ilione quod gesserat olim,
Maxima natarum Priami, colloque monile
Baccatum, et duplicem gemmis auroque coronam
Hæc celerans, iter ad naves tendebat Achates.

2. Parse and decline *fluctibus, mari summo, unam, vehebat, volvitur, vicit.*

3. Write the degrees of comparison of *multus, summus, maximus, senex utilis, similis.* Give the Perfect, Infinitive, Present and Supine of *abripio torqueo, cingo, veho, volvo, excutio.*

4. Explain the terms Cardinal, Ordinal, Distributive and Multiplicative as applied to Numeral Adjectives. Give all these forms for *unus*, and also its Adverb.

5. Write short notes explanatory of :—

(*a*) *Dorsum immane* mari summo :—What case, and why ?

(*b*) Apparent *rari* nantes :—What use of the adjective is this ?

(*c*) Ascanius *ferat* hœc :—What mood, and why ?

(*d*) *Ibidem* torquet agens :—What is the formation of this adverb ? Give examples of (1) adverbs derived from Nouns, (2) from Verbs.

(*e*) Fidumque vehebat Orontem :—Why imperfect tense ?

OPTIONAL SUBJECTS.

FRENCH.

SATURDAY, MARCH 29TH.

Examiner,.....H. ASPINWALL HOWE, M.A., LL.D.

1. Translate, *as closely as difference of idiom will admit :*

Charles reçut tous ces prisonniers d'importance avec une politesse aussi aisée et un air aussi humain que s'il leur eût fait dans sa cour les honneurs d'une fête. Il ne voulut garder que les généraux. Tous les officiers subalternes et les soldats furent conduits désarmés jusqu'à la rivière de Narva : on leur fournit des bateaux pour la repasser, et pour s'en retourner chez eux. Cependant la nuit s'approchait ; la droite des Moscovites se battait encore : les Suédois n'avaient pas perdu six cents homme. dix-huit mille Moscovites avaient été tués dans leurs retranchements ; un grand nombre était noyé ; beaucoup avaient passé la rivière : il en restait encore assez dans le camp pour exterminer jusqu'au dernier des Suédois. Mais ce n'est pas le nombre des morts, c'est l'épouvante de ceux qui survivent, qui fait perdre les batailles. Le roi profita du peu de jour qui restait pour saisir l'artillerie ennemie. Il se posta avantageusement entre leur camp et la ville : là il dormit quelques heures sur la terre, enveloppé dans son manteau, en attendant qu'il pût fondre au point du jour sur l'aile gauche des ennemi s qui n'avait point encore été tout à fait rompue.

2. Write the plural of the nouns *chou, sou, travail, cheval, bal, éventil œil, bétail* ; and the feminine of the adjectives *vieux, épais, beau, doux, sec, malin, long.*

3. When do the numeral adjectives *vingt*, and *cent* take *s* for their plural? When is *mil* used instead of *mille?* Write short sentences to illustrate answers.

4. Write in French:—*her cloak, his cloaks, her cloaks*, and explain the difference between the two languages in the use of Possessive Adjectives.

5. In the above extract why is *perdu* not plural, and in the next line why is *tués* not singular? When is the *Present Participle* of a French Verb ever made feminine and plural?

6. Write out the Imperfect Indicative of *s'approcher*, the Present Ind. of *dormir*, and the Future Ind. and Present Subj. of *pouvoir*.

ENGLISH.

SATURDAY, MARCH 29TH.

Examiner,.....H. ASPINWALL HOWE, M.A., LL.D,

1. Write legibly and punctuate properly the Dictation which will be read to you.

2. Expand the simple sentence "The Minister preached," by adding an Adjective *sentence* to the subject and an Adverbial *phrase* to the verb.

3. Parse "All the rest of the evening he played us airs from the opera, Il Trovatore."

4. Name the various classes (four) of Adjectives and distinguish between the *Attributive* and the *Predicative* use of an adjective. Illustrate your answer by examples.

5. What is meant by the *Mood* of a verb. Name the Moods, and give the significance of each explicitly.

6. Give the plural of:—*self, sheaf, gulf, spoonful, father-in-law, Madam, fous, vortex, genus, genius, crisis, cherub, beau.*

7. Write the Past Tense and Perfect Participle of *awake, beat, cling clothe, row, fly, flee, lay, lie, sew, sow, swell.*

8. Spell the present participle of:—*differ, defer, throb, laud, rid, ride, lie, lay, die, dye, sing, singe.*

9. Correct errors in the following, giving reason for the correction:—

Those kind of potatoes are the best.
That wife of my uncle's is always scolding.
I intended to have called last week.
They that honour me I will honour.
Who are you speaking to?

10. The grammatical correctness of the last sentence above can be defended. By what explanation ?

11. Take the forms *man*, *fer*, (fero, I carry) and *graph* (grapho, I write) : add as many prefixes and affixes as you can, giving the force of each, with the meaning of the words thus formed.

12. Give the etymology with meanings of:—*sheriff*, *alderman*, *witness*, *viaduct*, *emissary*, *stratification*, *chronometer*, *telephone*, *monarchy*, *abattoir*, *tapestry*, *poultry*.

13. Write a short Composition exercise on some important event in British History.

BRITISH HISTORY.

SATURDAY, MARCH 29TH.

Examiner,.....H. ASPINWALL HOWE, M.A., LL.D.

1. What is meant by the *Feudal System?* What were its leading provisions ? By whom was it introduced into England ?

2. Name the first king of the House of Hanover, and shew his claim genealogically to the throne of England. By what *Act* was this claim constituted into a *right?*

3. What was the *East India Company?* Give a short account of the origin and progress of the British power in India, with names of leading characters, and with dates.

4. State a few of the most important events in the history of Canada.

5. What contests were decided, and in whose favor, by each of the following victories :—Tewkesbury, Bosworth, Naseby, Worcester, Preston, Culloden, York-town, Vittoria

6. What were "The Hundred Years' War," "The Thirty Years' War," and "The Seven Years' War ? Name the Treaties of Peace by which the first was interrupted and the other two terminated.

7. What were "The Curfew," "The Star-Chamber," "The Solemn League and Covenant," "The Reform Bill."

Who were "The Non-conformists," "The Puritans," "The Independents," "The Pilgrim Fathers?"

GEOGRAPHY.

1. Name the islands, and the continents, with their several countries, traversed by the equator. Name the same also for the Meridian of Greenwich from north to south.

2. Draw a map of Egypt, shewing the junction of the White and Blue Nile, the subsequent course of that river and its Delta. Mark the position of Alexandria, Rosetta, Damietta, Suez, Cairo, The Pyramids, Khartoum and Suakim.

3. What are the boundaries of France, The Scandinavian Peninsula and British North America?

4. Where and what are Tonquin, Madagascar, Merv, Nerbudda, Coromandel, Malabar, Congo, Odessa, Dwina, Ortegal, Honduras, Maracaybo, Alaska, Canso, Miquelon.

5. What articles of commerce are interchanged between Great Britain and the following countries—France, India, United States and Canada.

ARITHMETIC.

SATURDAY, MARCH 29TH.

Examiner,..... H. ASPINWALL HOWE, M.A., LL.D.

1. What was the price of land per acre, when 96 acres, 2 roods, 10 poles were bought for $1,390·50.

2. To $3\frac{1}{2}$ of $5\frac{1}{6}$ add $\frac{2}{3}$ of $(6\frac{1}{4} - 1\frac{1}{2})$, and from the sum subtract $\frac{2\frac{1}{6}}{\frac{2}{3}}$

3. Simplify $\frac{22.4}{.25} + \frac{250}{.8} \div \frac{1.2}{.0075}$ without reducing the quantities to vulgar fractions, and prove the result by so reducing them.

4. If 8 per cent. is lost by selling an article for £25 10s. 0d., what per cent. would be gained or lost by selling it for £34?

5. The 3 per cents are at 96 and the $3\frac{1}{2}$ per cents at 105, which investment would produce the higher interest, and by how much per cent?

ALGEBRA.

1. Find the Least Common Multiple of $12x(x-1)^2$, $15(x^5 - x^3)$ and $30x^2(x+1)$.

2. Divide $a^6 - 6a + 5$ by $a^2 - 2a + 1$ and prove the result by multiplication.

3. Shew that $\frac{x-a}{x-b} + \frac{x-b}{x-a} - \frac{(a-b)^2}{(x-a)(x-b)} = 2$; and that

$$1 + \frac{a^2 + b^2 - c}{2ab} = \frac{(a+b+c)(a+b-c)}{2ab}.$$

4. Solve the equations :—

(1) $(x-a)\ (x-b) = (x-a-b)^2$.

(2) $\left\{\begin{array}{l} \frac{1}{3}(x+y) = 15-x \\ \frac{1}{6}(x-y) = 6-y \end{array}\right\}$

5. A cistern could be filled in 12 minutes by two pipes together, and it would be filled in 20 minutes by one of them alone. In what time would it be filled by the other alone ?

GEOMETRY.

SATURDAY, MARCH 29TH.

Examiner,.....H. ASPINWALL HOWE, M.A., LL.D.

1. If, at a point in a straight line, two other straight lines on the opposite sides of it, make the adjacent angles together equal to two right angles these two straight lines shall be in one and the same straight line.

2. One side of a triangle is greater than another. Prove that the former has the greater angle opposite to it.

3. If a side of a triangle be produced, the exterior angle is equal to the two interior and opposite angles, and the three interior angles of every triangle are together equal to two right angles.

(*a*) Prove that in any right-angled triangle the straight line joining the middle point of the hypothenuse to the right angle is equal to half the hypothenuse.

4. If a straight line be divided into any two parts, the rectangles contained by the whole and each of the parts, are together equal to the square of the whole line.

(*b*). Write the Algebraic expression for this Theorem.

(5). In every triangle the square on the side subtending an acute angle is less than the squares on the sides containing that angle by twice the rectangle contained by either of those sides and the straight line intercepted between the perpendicular let fall on it from the opposite angle, and the acute angle.

NOTE.—Confine your proof to the case in which the perpendicular falls within the triangle.

NATURAL PHILOSOPHY.

1. Two forces of 9 lbs. and 12 lbs. act upon a point at right angles to each other. Find the magnitude of the resultant.

2. Give the laws for velocity, time and space described when bodies descend on inclined planes. In what ratio is the force of gravity diminished in such cases.

3. What quantities are involved in problems of the Pendulum. Write an equation for one of them in terms of the others.

4. Explain clearly the method by which the varying force of gravity is determined at different points on the Earth's surface.

5. Distinguish between the centre of gravity and the centre of buoyancy of a floating body. When is the equilibrium of such a body stable, unstable and neutral.

6. The pressure of the atmosphere at the sea level is 15 lbs on the square inch. Why is the body of a diver descending in water still subject to this pressure ?

BOTANY.

FIRST YEAR.

SATURDAY, MARCH 15TH.

Examiner, ... PROF. D. P. PENHALLOW, B.Sc.

1. Define the principles of classification and point out the essential distinctions between natural and artificial systems, as also the advantage of each.

2. State what you can concerning the proper method of collecting and preserving plants.

3. Plant food : Its source, general character and function.

4. Assimilation : Describe the process, together with the most important and characteristic chemical changes. Also state what are the resulting products.

5. Metastasis : The nature of the process, the characteristic chemical changes, resulting products and distinction from assimilation.

6. Fruit of Phenogams : State its morphological character ; give a simple classification, and state reasons for the various morphological distinctions made.

7. The seed : Its origin, parts, function and special provision for nutrition of the young plant.

8. Describe the physical conditions essential to the promotion of assimilation, and show how this function may be varied by change of conditions.

9. *Rosaceæ*, *Ranunculaceæ*, *Anacardiaceæ* : Describe the general habit of growth ; state if injurious or useful, and in what respect, and mention some useful Canadian members, if possible.

10. *Leguminosae*, *Compositae*, *Sapindaceae* : State where these families are chiefly found ; for what they are chiefly useful, and give examples of Canadian species of value.

HISTOLOGY.

FIRST YEAR.

MARCH 15TH.

Examiner,.....PROF. OSLER, M.D., F.R.C.P. LOND.

Describe the structure

(1). Of the mucous membrane of the bladder, of a bronchus and of the nose;

2. Of a liver lobule;

3. Of the grey matter of the spinal cord.

Oral and Practical.

Monday, March 17th. In the Laboratory, 1 to 5 p.m.

PHYSICS.

THIRD YEAR.

Examiner,.....PROF. G. P. GIRDWOOD, M.D., M.R.C.S. ENG

1. What is meant by capillary attraction. Give reason why water presents a concave surface in a glass tube and mercury a convex one.

2. Give a short account of the Atomic Theory, showing the difference between atomic weight, equivalent weight and molecular weight.

3. Describe the process of solution and crystallization, giving the principal forms of crystals and their action on light and the action of heat upon them.

4. Describe the different forms of thermometers, and show how the temperature marked on one scale can be converted into corresponding temperature of other scales in use.

5. Describe a simple galvanic cell, and show the changes which take place during the time of contact between the terminals.

SUTHERLAND MEDAL.

SECOND YEAR.

MONDAY, MARCH 24TH.

Examiner,.....PROF. G. P. GIRDWOOD, M.D.

1. Describe Fraunhofer's lines, and explain how they are supposed to be produced?

2. Show how specific heat of compounds may be used to correct or determine the atomic weights of elements.

3. How can nitrogen be estimated, give the formula for the necessary corrections of the volume?

4. Describe the process of obtaining copper from its ores (the sulphides).

5. Give the process for the separation of magnesium.

6. Given 1 gramme of sugar, what weight of water and carbon dioxid will it yield on combustion.

7. How is magnesia estimated, give the process and figures for estimating the magnesia in 0.5 gramme mq. So 4.

8. What are the results of the oxidation of a primary, secondary and tertiary alcohol. Giving xamples.

PHYSIOLOGY.

SECOND YEAR.

TUESDAY, MARCH 18TH.

Examiner,.....PROF. OSLER, M.D., F.R.C.P., LON.

1 Describe the chemical and physiological properties of hœmoglobin.

2. Explain an *ordinary* inspiratory act.

(3) Explain the act of defacation.

4. An impression is received by the skin of the fingers and the hand is withdrawn. State:—(1) the path of the sensory impression to the grey matter of the cerebrum and the path of the moter impulse, causing the withdrawal of the arm; (2) the chief facts on which you base your statements.

5. The functions of the 3rd nerve.

6. Describe the forms of placentation in Mammals.

PRACTICAL ANATOMY.

EXAMINATION FOR HONORS.—THE DEMONSTRATOR'S PRIZE.

TUESDAY, MARCH 25th.

Examiner,.....R. L. MACDONNELL, B.A., M.D.

1. Name the parts divided by a knife drawn directly from one malleolus to the other, across the sole of the foot, cutting to the bone.

2. Describe the dissection necessary to expose the anterior surface of the adductor pollicis manus muscle.

3. Name in order, from below backwards, the parts divided in a horizontal section of the trunk at the level of the symphysis pubis.

4. Name in the order in which they are placed the parts in the space corresponding to the outline of the masseter muscle, beginning immediately under the skin and ending at the pharynx.

ANATOMY.

WEDNESDAY, MARCH 19TH.

Examiners,..... { PROF. FRANCIS J. SHEPHERD, M.D.
LECT. RICHARD MACDONNELL, B.A., M.D.

1. Describe the *radius*, including its articular surfaces, and mention in their proper relations the muscles attached to it, giving their actions and nerve supply.

2. Describe the *Hip Joint*, and name in their order the structure in relation to it.

3. Give the dissection necessary to expose fully the *Flexor Accessorius Pedis* muscle.

4. Enumerate in order the structures which must be removed to expose the first two portions of the *Internal Maxillary* artery.

5. Give the course and distribution of the third cerebral nerve. What results occur from its division?

6. Describe briefly the parts in relation with the anterior wall of the lower three inches of the *Rectum* in the male.

MATERIA MEDICA AND THERAPEUTICS.

WEDNESDAY, MARCH 19TH.

Examiner,.....PROF. J. STEWART, M.D.

1. Contrast the emetic actions of the following agents, ipecacuanha, tartar emetic, sulphate of zinc and apomorphia. Give the emetic dose and mode of administration of each.

2. Compare the antipyretic actions of quinine, salicylic acid, kairin, and a general bath at a temperature of 65° [Fah.] Give the mode of using these different means in order to obtain their fullest antipyretic effects.

3. Describe the method to be adopted in carrying out the treatment of a wound in a state of putrefaction by the following antiseptic agents: carbolic acid, corrosive sublimate, iodoform and naphthalin. What untoward effects may arise from the employment of carbolic acid and iodoform as antiseptics in the treatment of wounds?

In the case of carbolic acid describe fully the means to be adopted to counteract these effects once they have set in.

4. Describe the different methods of introducing mercury and iodine into the system for the treatment of syphilis. What untoward effects sometimes arise from the use of mercury? What is the best means to adopt to prevent the development of these effects. The untoward effects once having set in, what would be your treatment?

5. What accidents may happen during the administration of chloroform? Give in detail the treatment you would adopt for the accidents you mention? Are there any conditions which render ether not the safest anæsthetic?

How would you treat a case of opium poisoning? How would you treat the disagreeable symptoms which often occur after a moderate dose of opium How is the action of opium modified by:—

(1) Age.
(2) Sex.
(3) Idiosyncrasy.
(4) Habit.
(5) Disease.

In what points are the actions of morphia said to differ from that of opium?

*Students are required to answer four questions only of the six.

THIRD YEAR.

MONDAY, MARCH 17th.

HYGIENE.

Examiner,.....R. L. MACDONNELL, B.A, M.D.

1. How would you proceed to trace out the origin of an outbreak of typhoid fever in a small town?

2. Describe in detail the means to be adopted for counteracting contagion in a house where a case of scarlatina has occurred. (*a*) During the progress of the case, (*b*) During convalescence.

3. Enumerate the essential requirements of a good house drain.

4. What is meant by the "dry earth" system of removing excreta? Discuss its advantages and disadvantages.

MEDICAL JURISPRUDENCE.

SATURDAY, MARCH 22ND, 1884.

Examiner,.....PROF. GEORGE WILKINS, M.D., M.R.C.S. ENG.

1. What is the *hydrostatic lung test?* How performed? What are the objections to it as a test?

2. *Rigor mortis.* What is it? When does it set in? In what way may the cause of death affect its time of appearance and its duration?

3. What are the post-mortem appearances indicative of death from *asphyxia.*

4. In life insurance, what do you mean by the term "expectation of life." Give rules for calculating the "expectation"; also the "expectancy" of a man aged 35. What do you understand by the term "ten-year life" (ten payment life) policy?

5. Describe the stages of *general paralysis of the insane.*

6. What are the symptoms of *irritant* poisoning?

PATHOLOGY.

THIRD YEAR.

MONDAY, MARCH 17TH.

Examiner,.....PROF. OSLER, M.D., F.R.C.P. LOND.

1. Give a classification of the pathogenous Bacteria. Discuss the conditions necessary to be fulfilled before a micro-organism found in any disease can be said to be *specific.*

2. Describe the changes which a Thrombus may undergo.

3. Describe the coarse and microscopic characters of amyloid degeneration.

THEORY AND PRACTICE OF MEDICINE.

FRIDAY, MARCH 21ST.

Examiner,.....PROF. R. P. HOWARD, M.D., L.R.C.P.L.

1. Under what circumstances are albumin and tube-casts respectively found in the urine?

2. The symptoms and signs of anæmia and the characters of the blood in the simple and pernicious forms?

3. In what points do typhoid fever and Asiatic cholera resemble one another?

4. At what ages and under what conditions do the following diseases usually occur?—laryngismus, capillary bronchitis, rickets, cerebral hæmorrhage.

5. Describe the treatment of acute croupous pneumonia, and the indications for stimulants in that disease.

6. Sketch the morbid anatomy of the two forms of tuberculous kidney and the clinical evidence of "scrofulous kidney."

7. Mention the complications of acute articular rheumatism, and describe the treatment of hyperpyrexia in that affection.

8. "Biliary cirrhosis"—its pathology and clinical features?

9. State the characteristics of paralysis due to disease of the motor convolutions.

10. A youth suddenly suffers pain in mammary region and fever, without cough. A few days subsequently, respiratory and vocal sounds are weak, and percussion-note dull over right mammary zone of chest, but exaggerated over infra-scapular and infra-clavicular regions. About two weeks later he suddenly expectorates 12 ounces of pus, and a few days subsequently the physical signs over the original dull area are amphoric respiration, with metallic echo and hyper-resonant percussion-note. Over the base and apex the signs continue exaggerated. Give a diagnosis of the case, explain your reasons, and suggest appropriate treatment.

NOTE.—When describing treatment state the doses of the medicines to be employed.

M.D., C.M., FINAL EXAMINATION.

PRINCIPLES AND PRACTICE OF SURGERY.

SATURDAY, MARCH 22nd.

Examiners..... { PROF. G. E. FENWICK, M.D.
" F. BULLER, M.D., M.R.C.S., ENG.

1. Give the diagnosis and treatment of the various forms of hæmorrhage due to injury.

2. Rupture of muscular fibre; what symptoms would indicate such an injury? At what part of its course would a muscle be most likely to give way; and how would you treat it?

3. Describe the boundaries of Scarpa's triangle; mention the tumours or swellings sometimes met with in this region, and how would you distinguish them?

4 Describe the causes, most frequent situations, symptoms, and treatment of Abscess in Bone.

5. Mention the anatomical division of the male urethra; where does organic stricture of that canal most frequently occur?

6. Give a definition of the term "Hernia." In strangulated inguinal herniæ, where is the stricture situated; mention the relation of the epigastric artery to the neck of the sac in each variety.

7. Describe the different forms of Gangrene, mention the causes and treatment to be followed in each variety.

8. Ganglion: what is it, where does it commonly occur, how is it produced, and how would you treat it?

9. Mention the syphilitic diseases of the eye (those affecting only the eyeball), and give a brief account of Syphilitic Iritis, and state particularly how you would treat this disease.

10. Ulceration of the Cornea with Hypopyon; describe this condition as commonly seen, and how you would treat an eye so affected.

FINAL EXAMINATION.

MIDWIFERY AND GYNÆCOLOGY.

FRIDAY MARCH 21ST.

Examiners,..... { PROF. BROWNE, M.D.
PROF. GARDNER, M.D.

1. What is meant by abortion? Give the chief causes, the symptoms and treatment of abortion.

2. Into how many stages is labor divided? How would you manage the third stage of labor?

3. What is the first position of the vertex? Describe the attitude of the fœtus *in utero*, in so-called first positions.

4. What objections exist to the use of ergot in labor, and when would you use ergot, if at all?

5. Give the causes, symptoms and treatment of post-partum hemorrhage?

6. What diseases are lying-in women peculiarly liable to?

Give the causes of septicæmia, and the symptoms and treatment of acute septicæmia.

7. Dysmenorrhœa; mention the varieties, and sketch the symptoms of each.

8. Chronic endometritis; the symptoms and treatment.

9. Tents, their indications, uses, contraindications and dangers.

10. Describe fully Sim's method of speculum examination, and its advantages.

Faculty of Law.

1884.

COMMERCIAL LAW.

TUESDAY, 18TH MARCH.

FIRST YEAR.

AGENCY.

Professor, ...L. H. DAVIDSON, M.A., D.C.L

1. How may the relation of principal and agent be created in commercial matters? State how the powers and duties of the agent are to be determined under the several modes of appointment? Name the principal classes of commercial agents.

2. How is the remuneration of the factor determined? What is meant by a *del credere* commission? When does it become due to the agent? What is its effect as to the principal?

3. Explain the difference between a factor and a broker. Is there any difference in the rights of one and other as to remuneration, and if so what?

4. Is there any difference, and if so what, in the liability towards third parties of a home and foreign factor? What is meant by the "lien" of the agent, and when and to what does it attach? How may it be lost?

5. What is the effect as to third parties of the possession by, or the entrusting to, an agent of the goods of his principal? Explain fully.

6. How may the agent's power to bind his principal be terminated?

COMMERCIAL LAW.

TUESDAY, 18TH MARCH.

SECOND AND THIRD YEARS.

BILLS, NOTES AND CHEQUES.

Professor, ...L. H. DAVIDSON, M.A., D.C.L.

1. Give definition, respectively, of a bill of exchange, promissory note, and cheque; and explain what parties to these several instruments stand in similar position as to liability.

2. What is meant by "Consideration" in reference to bills and notes and when may it be enquired into? What is the effect of absence of consideration between the original parties in the case of a subsequent *bona fide* holder for value receiving the bill or note, (1) before maturity, (2) after maturity?

3. What is the effect of acceptance of a bill as to the acceptor? of the indorsement of a promissory note as against the endorser? of the acceptance or certification of a cheque as to the bank accepting? Answer fully.

4. What is the rule as to the "Equities" in reference to bills, notes and cheques, and explain when it applies and its extent?

5. Explain the steps necessary to be taken to hold the parties in case of non-acceptance of a bill, and non-payment of a bill or note?

6. What are "Days of Grace?" and in what cases are they allowed?

7. What is the general rule as to the effect of an alteration in a bill of note after its issue? and in what cases does the rule not apply?

8. What is the effect of non-presentment within a reasonable time of a cheque payable on demand, (1) as to the drawer and endorser, (2) as to the Bank when presented?

9. What is the rule as to the forgery of the signature of the drawer of a cheque, and as to the alteration of any other part of the instrument in regard to the liability of Bank paying the cheque? and explain.

N.B.—Competitors for the Medal will answer all the questions; others only the first six.

FIRST YEAR.

CIVIL PROCEDURE.

FRIDAY, MARCH 14TH :—3 TO 5 P.M.

Examiner,.....M. HUACHINSON, B.C.L.

1. In how many ways may a debtor resident at Halifax be summoned before our courts? Describe each mode.

2. How is service effected upon ship captains who have no domicile in Quebec? How are church *fabriques* served?

3. A suit is to be taken against the Collector of Customs by reason of some act done by him in the exercise of his functions at Montreal. Under what circumstances, if any, could this suit be taken at Sherbrooke? and what notice must be given before taking the suit, and what must it specify?

4. A suit is to be taken for separation from bed and board by a wife against her husband; the husband is domiciled at Quebec and the wife at Montreal. Under what circumstances, if any, could the suit be taken in Montreal?

5. A debt is contracted in New York between two Germans. Under what circumstances, if any, could suit be taken in Montreal for the collection of this debt?

6. B, a minor, is injured by the careless driving of C, who is in the employ of D and driving D's horses. How can B take suit for the recovery of damages? and by whom and against whom ought suit to be brought?

SECOND AND THIRD YEARS.

CIVIL PROCEDURE.

FRIDAY, MARCH 14TH :—3 TO 5 AND 3 TO 6 P.M.

Examiner,.....M. HUTCHINSON, B.C.L.

1. A is arrested under a *capias* at the instance of B; he petitions and succeeds in quashing the capias. Has A a good action of damages against B? Give reasons.

2. A contracts a debt in favor of B in New York. A afterwards secretes his property and effects and comes to Montreal with a portion of his goods. Can he be arrested under a capias by B in Montreal? Can his goods here be seized before judgment?

3. An action accompanied by a capias is taken for the recovery of a debt of $75. The debtor is arrested, but the capias is afterwards quashed. What court has jurisdiction to give judgment for the debt? If there had been no arrest how could judgment be obtained for the debt?

4. A traveller gives his watch to a hotelkeeper for safekeeping over night; it is taken away, and it is necessary to revendicate it. Who can take this action, and what affidavit is necessary to seize it before judgment?

5. A landlord leases a shop to a fruit dealer. The rent is not paid, and the landlord seizes, and among other effects seized are one hundred cases of oranges. If the landlord merely asks for a money condemnation for the amount of his rent what delay must he give the defendant before he can take judgment? and what are his legal rights for the protection of himself against the perishable nature of the goods seized? What would be his legal right if he claimed the goods as his own, and was attempting to revendicate them?

6. What public notice must be given in suits for separation of property? and at what stage? What notice in suits for separation from bed and board? and what are the requisites in order to give jurisdiction to the court in these cases?

7. A is insolvent. B has a judgment against him for $5,000 and has seized A's effects, and is about to sell them. What right has C, another creditor of A's, to share in the proceeds of the sale to be made by B; and how can C enforce his rights?

8. If in the case of the last preceding question C was A's landlord, and had a lien on the effects seized by B, what would be C's rights, and what proceeding should he take to be paid his rent?

9. Under what circumstances may a person imprisoned compel his creditor to pay him an alimentary allowance?

The last three questions to be answered only by candidates for the medal.

PREMIERE ANNEE.

LUNDI, 17 MARS 1884.

Examinateur,.....PROF. J. E. ROBIDOUX.

1. Qui est sujet britannique ?

2. (*a*) Comment se perdent les droits civil ? (*b*) Quels sont les effets de la mort civile ?

3. (*a*) Qu'entend-on par possession provisoire ? (*b*) Quand y a-t-il lieu à la possession provisoire ? Comment s'obtient l'envoi en possession provisoire ?

4. (*a*) Quelles sont les formalités relatives à la célébration du mariage ? (*b*) Quand y a-t-il lieu à la demande en nullité de mariage ?

5. (*a*) Quand y a-t-il lieu à la séparation de corps ? (*b*) Quelles sont les formalités de la demande en séparation de corps ?

6. (*a*) A qui sont confiés les enfants dans le cas de séparation de corps ? (*b*) Comment prend-elle fin ?

FIRST YEAR.

MARCH 17TH, 1884.

Examiner,.....PROF. J. E. ROBIDOUX.

1. What is a British subject ?

2. (*a*) How civil rights are lost ? (*b*) What are the effects of civil death ?

3. (*a*) What is provisional possession ? (*b*) When does it takes place ? How is it obtained ?

4. (*a*) What are the necessary formalities for the celebration of marriage ? (*b*) When may the nullity of marriage be demanded ?

5. (*a*) When separation from bed and board may be demanded ? (*b*) What are the necessary formalities of a demand of separation from bed and board ?

6. (*a*) To whom are the children entrusted, in case of separation of from bed and board ? (*b*) How separation from bed and board may be ended ?

SECOND AND THIRD YEARS.

MARCH 17TH, 1884.

Examiner,..... PROF. J. E. ROBIDOUX.

1. (*a*) Why must the marriage contract be made? (*b*) In what form must it be made? (*c*) When and how can it be modified? (*d*) Who are the parties to a marriage contract? (*e*) *Quid*, if one of the parties refuses his consent to alterations?

2. (*a*) What is a regimen (*regime*)? (*b*) How many are recognized by the Code? (*c*) Define each of those admitted by the Code?

3. (*a*) What is legal community? (*b*) In what does it differ from partnership? (*c*) What are the principal modifications which can be made to the legal community? (*d*) State in what consists each of those modifications?

4. (*a*) What are the debts due by a succession which fall or do not fall on the community, as regards the creditors? (*b*) What are the debts due by a succession which fall on community, as regards the consorts?

5. (*a*) What is compensation (*récompense*)? (*b*) What compensation is due by one of the consorts to the community? (*c*) What compensation is due to the community by the consorts?

6. (*a*) What property form the dividable mass of the community? (*b*) How is it determined? (*c*) What properties must the consorts return? What do they pretake?

7. (*a*) How many kinds of dowers are there? (*b*) On what property is customary dower constituted? (*c*) What is the customary dower resulting of a second marriage?

8. When may the wife be deprived of her dower?

9. What are the dispositions of the 44-45th Victoria (Quebec) as to dower?

10. In what state are things which are subject to dower taken by the dowager?

11. What rights has the wife on the additions made to the thing subject to her dower?

N.B.—Those not competing for the medal need not answer the three last questions.

ROMAN LAW.

SECOND AND THIRD YEARS.

TUESDAY, MARCH 11TH, 1884:—3 TO 5; 3 TO 6 FOR MEDAL.

Examiner,.....N. W. TRENHOLME, M.A.

1. Point out briefly the nature and importance of the division of *res*, into *res mancii* and *res nec mancipi*?

2. What things are moveable and what immoveable, in our laws and point out the importance of this division?

3. What are the rights of a possessor (*a*) in good faith; (*b*) in bad faith, as regards (1) fruits gathered by him (2) as regards improvements made on the property?

4. Give a brief sketch of the growth and development of the law of wills; and mention their different kinds in Roman Law and in our law.

5. What was the order of abintestate succession: (1) by the law of the XII Tables, (2) as modified by the Proctorian Edict, (3) as established by Justinian?

6. Where there are heirs and legatees or different kinds of legatees, who pay the debts of the estate in our law, and what remedies do creditors and legatees of the estate possess to secure payment out of the assets of the estate?

7. Trace briefly the growth of contract in Roman law.

8. Give a short account of *fideicommissa* and *codicilli*.

9. Give some account, with dates, of the five principal jurists whose writings are found in the Digest.

The last three questions will be answered by medal students only.

FIRST YEAR.

CRIMINAL LAW.

WEDNESDAY, 12TH MARCH.

Examiner,.....PROF. ARCHIBALD.

1. Define Criminal Law. Discuss from a philosophical or theoretical standpoint the province of criminal law as distinguished from other laws.

2. By what laws are we governed in criminal matters in the Province of Quebec; give a short statement of the history of our criminal law.

3. Define *Common Law* and *Statutory Law*; explain the relative positions which these two branches of law hold to each other.

4. When a statute declares that any person who does a certain act shall be guilty of felony, what exceptions, having relation to the person who commits the act, if any, does the common law supply, modifying the general language of the statute.

5. Explain the doctrine of principals and accessories, giving illustrations.

6. Define *Libel*: Give a short sketch of any important changes which have been made in the law relating to it.

7. Define *Conspiracy*, *Riot*, *Murder*, *Manslaughter*, *Counterfeiting*: Discuss the technical meaning of the word *malice* as used in Criminal Law.

SECOND AND THIRD YEARS.

CRIMINAL PROCEDURE AND ELECTION LAW.

WEDNESDAY, 12TH MARCH.

Examiner,.....PROF. ARCHIBALD.

1. How many peremptory challenges has the Crown and the Prisoner respectively, in the different classes of offences?

2. How are challenges for cause tried?

3. When a confession of a prisoner is tendered in evidence, what objections may be made to its reception? Distinguish between judicial and extra judicial confessions, with regard to the conditions necessary to make them admissible in evidence.

4. What are dying declarations, and when are they admissible in evidence ?

5. What remedies may be taken by a prisoner after conviction, and when is each applicable ?

6. Mention and discuss some of the principal reforms introduced by the Dominion Elections Act, 1874.

7. What are the duties of the Returning Officer with regard to the holding of an election ?

8. What are the principal causes of nullity of an election, established under said act?

9. Explain fully the provisions of said Act with regard to voting by ballot, and mention any amendments which have been made ?

10. Of how many members is the Dominion Parliament composed, and how many represent each province? What provision, if any, exists for the re-adjustment of the representation of the several provinces?

11. Give your views as to the constitutionality of the *Dominion License Act?*

* The whole class will answer the first 8 questions: competitors for the medal will answer the whole paper.

INTERNATIONAL LAW AND INSURANCE.

MONDAY, 10TH MARCH:—4 TO 6 P.M.

Professor, ...W. W. H. KERR, Q.C., D.C.L.

1. By written contract in the month of May, A sells to B 50 tons of pressed hay, deliverable at a certain wharf in the port of Montreal on or before the 30th June, the price being $40 per ton. On the 30th June, at 8 p.m., A brings 49½ tons of hay in barges to the wharf named, there finds B. and tenders them to him; B refuses to accept, the price of hay on the 30th June had fallen to $19 per ton.

Can A recover damages from B, and if so what amount ?

2. A, by written contract, purchases from B 10,000 bushels of wheat by sample at $1.10 per bushel, deliverable within three weeks of date of contract; within that period he tenders to B 10,000 bushels of wheat in a warehouse in Montreal, wheat at that time had fallen 10 cents per bushel A asks B to give him an order to examine the bulk, and compare it with the sample; this B refuses to do, thereupon A throws up the contract refuses to take the wheat and pay the price.

What recourse has B against A ?

3. A, a trader, agrees verbally to purchase from B, a trader, 100 tons of iron, at $30 a ton, deliverable in three days. Previous to the expiration of the delay for delivery A writes to B, to the effect that he disaffirm the contract, and will not receive the goods,specifying them and their price and referring to the fact that the delay for delivery had not expired.

Has B any action against A? Give the reasons for your decision?

4. A orders from B, a manufacturer of chains, a chain to be used for the purpose of discharging railway iron, etc., from the holds of vessels, the chain to be capable of bearing a strain of five tons. After the delivery of the chain it was used by A in raising iron from the hold of a vessel, and broke whilst lifting iron weighing two tons ; the iron fell upon one of the men engaged in the work and broke one of his legs—no neligence was imputable to him or any of the men engaged.

Is B liable for damages, if they are recovered against A by the man injured?

Give the reasons for your decision?

5. France and Germany being at war with each other, a French man-o war whilst at New York added to her armament and shipped some sailors on board. Proceeding on her cruise she captured a German merchant vessel. which she brought into the Port of Baltimore. The German minister represented these facts to the United States Government, and asked for redress.

What should the United States Government do under the circumstances?

Give the reasons for your opinion.

6. A and B, domiciled Italian subjects, were married at Rome, they then removed to the State of Massachuset's and there acquired a domicile. The husband before the Courts in that State obtained a divorce and married again.

Is the divorce valid in Italy? Give the reasons for your opinion.

7. A, a German, commits a murder in the street at St. Petersburg, and then takes refuge in the hotel of the German Ambassador there. The Russian authorities enter the hotel, and take therefrom the culprit by force against the resistance of the Ambassador.

Was the Ambassador justified in endeavoring to prevent the arrest of the culprit? Give the reason for your opinion.

8. A memorandum in writing was drawn up of a sale of hops, containing all the conditions of sale, save the price (which had been settled upon.)

The plaintiff, in an action brought to compel the defendant to accept the goods and pay for them, sought to establish the price by verbal evidence, —to this the defendant objected.

Should such evidence be admitted. Give the reasons for your opinion.

9. A sells verbally to B 1,000 bushels of potatoes. B pays A on account of the price, $50.00. A refuses to deliver the potatoes to B.

Can A prove the contract and the payment of the $50.00 on account of he price by verbal evidence? Give the reasons for your decision.

The first six questions for ordinary students, the whole paper to be answered by those competing for the medal and the professor's prize.

University School Examinations,

1884.

PRELIMINARY SUBJECTS.

GEOGRAPHY.

MONDAY, JUNE 2ND :—MORNING, 9 TO 11.

Examiners, ... J. CLARK MURRAY, LL.D.
REV. PROF. SCARTH, M.A.
CHAS. E. MOYSE, B.A.
REV. P. C. READ, M.A.

(*Number your answers carefully.*)

1. What imaginary lines bound the Torrid Zone? Explain the meaning of tropics, antipodes.

2. What causes day and night? What is meant by equinox? How many equinoxes are there? When do they occur?

3 The following questions refer only to Asia, Africa, Europe: (*a*) Which is the largest? (*b*) Which has the most, and which the least, coast-line in proportion to area? (*c*) Which contains the highest mountain? (*d*) In what range? (*e*) Which contains the longest river? (*f*) Its name? (*g*) Which extends farthest North? (*h*) The name of its extreme northerly point? (*i*) Which exhibits the greatest difference in climate? (*j*) Which is the most populous? (*k*) Which contains the largest empire? (*l*) The name of that Empire?

4. Name the great mountain ranges of Europe, and say where each is situated.

5. Define the limits of the three great natural sections of the United States:—viz., the Atlantic Slope, the Mississippi Valley, the Pacific Slope. (*b*) Name the principal rivers on the Atlantic Slope.

6. What are the leading features of the physical geography of Canada? Name the divisions of Canada.

7. Trace the course of the St. Lawrence. Name its chief tributaries, and the principal towns on its banks.

8. Give the position of Soudan. Where are Kartoom and Suakim?

9. Give the boundaries of Hindostan. What is the direction of its river slope? Name its great rivers.

10. Name the three groups of the West Indian Islands. Give the names of the principal islands in the British Islands.

11. Name the States of South America.

12. Give the situation of the following:—Malta, Suez Canal, Caspian Sea, Liverpool, Madrid, Rio Janeiro, Halifax, Detroit, Liberia, Calcutta.

ENGLISH GRAMMAR.

MONDAY, JUNE 2ND:—AFTERNOON, 2 TO 4.

Examiners,..... J. CLARK MURRAY, LL.D.
REV. PROF. SCARTH, M.A.
CHAS. E. MOYSE, B.A.
REV. P. C. READ, M.A.

1. What is the meaning of Etymology, Orthography, Analysis, Tense, Mood, Degree?

2. Give rules for the formation of the plural and the feminine of nouns substantive, with two exceptions to each.

3. Give the chief parts of the verbs:—spend, go, come, admire, drown. To what classes do these verbs belong?

4. Define:—Complex sentence, transitive verb, indirect object.

5. Frame three sentences, shewing the use of the subjunctive mood.

6. Correct, where necessary:

(*a*). I and you were there, weren't we?

(*b*). Nobody cares about such a kind of a man as you.

(*c*). If I was you, you would have gone a packing.

7. Analysis:—

i. O Antony, beg not your death of us,
Though now we must appear bloody and cruel,
As you see we do; yet see you but our hands
And this the bleeding business they have done.

ii. As they pass by, pluck Casca by the sleeve:
And he will, after his sour fashion, tell you
What hath proceeded worthy note to-day.

ARITHMETIC.

TUESDAY, JUNE 3RD :—MORNING, 9 TO 12.

Examiners..... { REV. PRINCIPAL LOBLEY, D.C.L.
G. H. CHANDLER, M.A.

1. From fifty millions seven thousand and three subtract two millions fifty-seven thousand and forty-six, and express the result in words.

2. What numbers when divided by 342 give 32 as remainder?

3. Find the value of $\frac{4}{7}$ of $\frac{1}{3}$ of $\frac{13\frac{4}{5}}{3\frac{1}{7}}$ of a ton at $7.25 per cwt.

4. From 37 cub. yds. 18 cub. ft. 857 cub. in. take 35 cub. yds. 24 cub. ft and 1280 cub. in.

5. If 24 cwt. be carried 324 miles for $19.99, how much will the carriage of 33 cwt. for 408 miles cost?

6. Show how to divide $49 among five men, six women, and seven boys, so as to give each woman twice as much as each boy and each man three times as much as each woman.

7. Find the simple interest on $10.22 from the 1st of May to 25th of June both days inclusive, at $7\frac{1}{2}$ per cent. per annum.

8. Reduce 2s. 3d. to the decimal of £1.

9. By selling sugar at $10\frac{1}{2}$ cents per pound $3\frac{3}{4}$ per cent. is lost; at what price should it be sold to gain 10 per cent?

10. The true length of the year is 365.24224 days; if every fourth year were taken as leap year, in what time would the error in reckoning amount to one day?

11. A room is 15 ft. long, 10 ft. broad, and 9 ft. 9 in. high; find the cost of painting the walls and ceiling at 42 cents per sq yd.

12. Find the square root of 2.5 and that of .001, each to 3 decimal places

BRITISH AND CANADIAN HISTORY (*Collier* and *Jeffers*).

TUESDAY, JUNE 3RD :—AFTERNOON, 2 TO 5.

Examiners,..... { J. CLARK MURRAY, LL.D.
REV. PROF. SCARTH, M.A.
CHAS. E. MOYSE, B.A.
REV. P. C. READ, M.A.

(*Number your answers carefully.*)

1. Name (*a*) one of the Roman divisions of Britain, (*b*) an important event during Roman rule, (*c*) one of the kingdoms of the so-called Heptarchy, (*d*) the extreme northern limit of Saxon rule.

2. Mention one historical fact of any kind regarding, (1) the Feudal system, (2) Alfred's literary work, (3) Guthrum, (4) the Wars of the Roses, (5) the discovery of America, (6) the Reformation in England, (7) Thomas a Becket, (8) Magna Carta, (9) Edward the Confessor, (10) the ordeal, (11) the first conquest of Ireland by the English, (12) the loss of Normandy, (13) Simon de Montfort, (14) Maud, daughter of Henry I, (15) Wat Tiler, (16) the Puritans, (17) Sir Walter Raleigh, (18) Henry VIII., (19) the loss of Calais, (20) the First Crusade, (21) any insurrection in the reign of Henry VII., (22) London, (23) the Duke of Monmouth, (24) the Young Pretender.

3. Give a list of the sovereigns of Britain, in order, from James I. to the present time. In what family relation did each stand to his predecessor ?

4. Name three great military and three great political events which happened in Britain during the seventeenth century. Write the names of any three British statesmen, before the reign of Victoria, and say in whose reign or reigns each lived.

5. What are the three Estates of the British Realms ? Through what stages must a Bill pass before it becomes a law of the land ?

6. Mention one historical fact concerning, (1) Jacques Cartier (2) Quebec, (3) Louisburg, (4) General Braddock, (5) Champlain, (6) the Treaty of Paris, (7) the Iroquois, (8) John Cabot, (9) the United Empire Loyalists.

7. When were the Provinces of Upper and Lower Canada separated ? When did their Legislative Union take place ?

8. What led to the British American war of 1812-1814 ? Mention any two leading events that occurred in Canada during that time.

9. What famous event took place in Canada in 1837 ?

10. What do you know concerning the Ashburton treaty ?

11. When was the British North America Act passed ? State very briefly what was its aim.

THE GOSPELS.

MONDAY, JUNE 2ND :—MORNING, 11 TO 12.

Examiners, ... { J. CLARK MURRAY, LL.D.; REV. PROF. SCARTH, M.A.; PROF. C. E. MOYSE, B.A.; REV. P. C. READ, M.A.

1. State the relation between Jesus and His forerunner.

2. Relate the incident which occurred in the twelfth year of the life of Jesus.

3. Tell the circumstances in which any one of the following disciples was called by Jesus:—Matthew, Andrew, Nathanael.

4. Mention the event for which each of the following places is celebrated in the gospel history:—Bethlehem, Cana of Galilee, Nain, Bethany.

5. Explain the nature of parables in general, and relate one parable with its explanation.

6. Tell what you know of any two of the following persons:—Nicodemus, Herodias, Herod the Great, Zacchæus, Bartimeus, Pilate.

OPTIONAL SUBJECTS.

GREEK.

WEDNESDAY, JUNE 4TH :—MORNING, 9 TO 12.

Examiners, ... { REV. GEORGE CORNISH, LL.D.; REV. CANON NORMAN, D.C.L.

I. Translate, Homer, Iliad Book IV. :—

(*a*) Οὐδὲ σέθεν, Μενέλαε, θεοὶ μάκαρες λελάθοντο
ἀθάνατοι, πρώτη δὲ Διὸς θυγάτηρ ἀγελείη
ἥ τοι πρόσθε στᾶσα βέλος ἐχεπευκὲς ἀμυνεν.
ἡ δὲ τόσον μὲν ἔεργεν ἀπὸ χροὸς, ὡς ὅτε μήτηρ
παιδὸς ἐέργῃ μυῖαν, ὅθ' ἡδέϊ λέξεται ὕπνῳ·
αὐτὴ δ' αὖτ' ἴννυνεν ὅθι ζωστῆρος ὀχῆες
χρύσειοι σύνεχον καὶ διπλόος ἤντετο θώρηξ.
ἐν δ' ἔπεσε ζωστῆρι ἀρηρότι πικρὸς ὀϊστός·
διὰ μὲν ἂρ ζωστῆρος ἐλήλατο δαιδαλέοιο,
καὶ διὰ θώρηκος πολυδαιδάλου ἠρήρειστο
μίτρης θ', ἣν ἐφόρει ἔρυμα χροὸς, ἔρκος ἀκόντων,
ἥ οἱ πλεῖστον ἔρυτο· διαπρὸ δὲ εἴσατο καὶ τῆς.
ἀκρότατον δ' ἂρ' ὀϊστὸς ἐπέγραψε χρόα φωτός·
αὐτίκα δ' ἔρρεεν αἷμα κελαινεφὲς ἐξ ὠτειλῆς.

(*b*) Τρῶες δ', ὥστ' ὄϊες πολυπάμο ἀνοςνδρὸς ἐν αὐλῃ
μυρίαι ἑστήκασιν ἀμελγόμεναι γάλα λευκὸν,
ἀζηχὲς μεμακυῖαι, ἀκούουσαι ὅπα ἀρνῶν,
ὣς Τρώων ἀλαλητὸς ἀνὰ στρατὸν εὐρὺν ὀρώρει·
οὐ γὰρ πάντων ἦεν ὁμὸς θρόος οὐδ' ἰα γῆρυς,
ἀλλὰ γλῶσσ' ἐμέμικτο, πολύκλητοι δ' ἔσαν ἀνδρες.
ὦρσε δὲ τοὺς μὲν Ἄρης, τοὺς δὲ γλαυκῶπις Ἀθήνη
Δεῖμός τ' ἠδὲ Φόβος καὶ Ἔρις, ἀμοτον μεμανῖα,
Ἄρεος ἀνδροφόνοιο κασιγνήτη ἑτάρη τε,
ἥτ' ὀλίγη μὲν πρῶτα κορύσσεται, αὐτὰρ ἔπειτα
οὐρανῷ ἐστήριξε κάρη καὶ ἐπὶ χθονὶ βαίνει.
ἣ σφιν καὶ τότε νεῖκος ὁμοῖϊον ἐμβαλε μέσσῳ
ἐρχομένη καθ' ὅμιλον, ὀφέλλουσα στόνον ἀνδρῶν.

2. (*a*) Point out Epic forms in the above extracts and give the equivalent forms in Attic. (*b*) Give the name and scale of the metre, and scan the last four verses of ext. (*b*) noting any metrical peculiarities.

3. (*a*) Show the grammatical construction of the following words :—Ext. (*a* —(1) *σέθεν, παιδός, μυῖαν, ὕπνῳ, οἱ, τῆς.* (*b*) Write down the *Nom. Sing.* and *Plu.* of the following :—*ἐπέσσι, θεάων, ἄνακτος, τοῖο, κῆρι, βελέϊ, σφῆσιν, αἰγίδα.* (*c*) Parse, giving the pricipal parts :—*ὀρσομεν. ἠσθην, ἠρει, βάν, καμέτην, ἔρξον, τιέσκετο, διαπέρσαι, ἤιξεν, ἐπιπροέμεν.*

4. Translate, Xenophon, Anabasis, Book II. :—

(*c*) Οἱ μὲν δὴ στρατηγοὶ οὕτω ληφθέντες ἀνήχθησαν ὡς βασιλέα, καὶ ἀποτμηθέντες τὰς κεφαλὰς ἐτελεύτησαν· εἷς μὲν αὐτῶν Κλέαρχος ὁμολογουμένως ἐκ πάντων τῶν ἐμπείρως αὐτοῦ ἐχόντων δόξας γενέσθαι ἀνὴρ καὶ πολεμικὸς καὶ φιλοπόλεμος ἐσχάτως. Καὶ γὰρ δὴ ἕως μὲν πόλεμος ἦν τοῖς Λακεδαιμονίοις πρὸς τοὺς Ἀθηναίους παρέμεινεν· ἐπεὶ δ' εἰρήνη ἐγένετο, πείσας τὴν αὐτοῦ πόλιν ὡς οἱ Θρᾷκες ἀδικοῦσι τοὺς Ἕλληνας καὶ διαπραξάμενος ὡς ἐδύνατο παρὰ τῶν Ἐφόρων ἐξέπλει ὡς πολεμήσων τοῖς ὑπὲρ Χερρονήσου καὶ Πειρίνθου Θραξίν. Ἐπεὶ δὲ μεταγνόντες πως οἱ Ἔφοροι ἤδη ἔξω ὄντος αὐτοῦ ἀποστρέφειν αὐτὸν ἐπειρῶντο ἐξ Ἰσθμοῦ, ἐνταῦθα οὐκέτι πείθεται, ἀλλ' ᾤχετο πλέων εἰς Ἑλλήςποντον. Ἐκ τούτου καὶ ἐθανατώθη ὑπὸ τῶν ἐν τῇ Σπάρτῃ τελῶν ὡς ἀπειθῶν. Ἤδη δὲ φυγὰς ὢν ἔρχεται πρὸς Κῦρον, καὶ ὁποίοις μὲν λόγοις ἔπεισε Κῦρον ἄλλῃ γέγραπται. δίδωσι δ' αὐτῷ Κῦρος μυρίους δαρεικούς· ὁ δὲ λαβὼν, οὐκ ἐπὶ ῥᾳθυμίαν ἐτράπετο, ἀλλ' ἀπὸ τούτων τῶν χρημάτων συλλέξας στράτευμα ἐπολέμει τοῖς Θραξί· καὶ μάχῃ τε ἐνίκησε καὶ ἀπὸ τούτου δὴ ἔφερε καὶ ἦγεν αὐτούς· καὶ πολεμῶν διεγένετο, μέχρι Κῦρος ἐδεήθη τοῦ στρατεύματος· τότε δ' ἀπῆλθεν ὡς σὺν ἐκείνῳ αὖ πολεμήσων.

5. (*a*) "Οὗτοι ἔλεγον ὅτι Κῦρος μὲν τέθνηκεν, Ἀριαῖος δέ πεφευγὼς εἴη·" —Translate, and explain the change of mood in the dependent clauses. (*b*) Translate the following—(1) "ἔτυχε γὰρ θυόμενος." (2) "ἴσθι μέντοι ἀνόητος ὤν·"—Explain the Nom. ἀνόητος. (3) Distinguish the meaning of ἀποδρᾶναι and ἀποφυγεῖν. (4) Translate "Ὁ δὲ φοῖνιξ ὅθεν ἐξαιρεθείη ὁ ἐγκέφαλος ὅλος αὐαίνετο." (5) "ὅτι βασιλεὺς ἡμᾶς ἀπολέσαι ἂν περὶ παντὸς ποιήσαιτο."

6 (*a*) Compare in Nom. Sing πρῶτος, ἐγγύς, μικρὸς, μέλας, ῥᾷδιος, ἐλαχὺς, μέσος.—(*b*) Give the force of the terminations in οὐδαμόθεν and οἰκαδε. (*c*) Explain the use of the participle in ἐπεμψέ τινα ἐροῦντα; and the construction of the participle in ὑμᾶς ἐξὸν ἀπολέσαι.

7. (*a*) Write the 1st person singular of the principal tenses (active) of κτείνω, ὄμνυμι, κτάομαι, ἔχω, ἀπόλλυμι, κατακόπτω, βαίνω.—(*b*) Give the *Gen.* and *Accus Sing.* and *Gender* of ἐλπίς, ὄρνις, λεώς, ἰχθύς, κρεάς αἰδώς.

8. What cases follow παρά, ἐπί, and ἀντί? Give the meaning in each instance.

LATIN.

MONDAY, JUNE 9TH:—MORNING, 9 TO 12.

Examiners,..... { REV. GEORGE CORNISH, LL.D.
REV. CANON NORMAN, D.C.L.

1. Translate, Virgil, Æneid, Book V.:—

(*a*) Tum satus Anchisa caestus pater extulit aequos,
Et paribus palmas amborum innexuit armis.
Constitit in digitos extemplo arrectus uterque,
Bracchiaque ad superas interritus extulit auras.
Abduxere retro longe capita ardua ab ictu,
Inmiscentque manus manibus, pugnamque lacessunt.
Ille pedum melior motu, fretusque iuventa,
Hic membris et mole valens; sed tarda trementi
Genua labant, vastos quatit aeger anhelitus artus.
Multa viri nequiquam inter se volnera iactant,
Multa cavo lateri ingeminant et pectore vastos
Dant sonitus, erratque auris et tempora circum
Crebra manus, duro crepitant sub volnere malae.
Stat gravis Entellus nisuque inmotus eodem,
Corpore tela modo atque oculis vigilantibus exit.

2. Translate:—(1) In nubem cogitur aer. (2) Subjiciunt veribus prunas. (3) Apricis statio gratissima mergis. 4) Voti reus. (5) Lentus carinas-est vapor. (6) Una omnes fecere pedem.

3. Translate, Ovid, Fasti, Book I.:—

(*b*) Hac ego Saturnum memini tellure receptum :
Coelitibus regnis ab Jove pulsus erat.
Inde diu genti mansit Saturnia nomen ;
Dicta quoque est Latium terra latente deo.
At bona posteritas puppim formavit in aere,
Hospitis adventum testificata dei.
Ipse solum colui, cujis placidissima laevum
Radit arenosi Tibridis unda latus.
Hic, ubi nunc Roma est, incaedua silva virebat,
Tantaque res paucis pascua bubus erat.
Arx mea collis erat, quem cultrix nomine nostro
Nuncupat haec aetas, Janiculumque vocat.
Tunc ego regnabam, patiens cum terra deorum
Esset, et humanis numina mixta locis.

4. (*a*) Distinguish mālæ and mălæ, sōlum and sŏlum. (*b*) Give the Nom. Sing. of cælitibus bubus and viscera, and the derivation of anhelitus. (*c*) Parse:—Extulit, innexuit abduxere, trementi, mansit, mixta.

5. Translate, Cicero, Cato Major :—

(*c*) Quod si ipse exsequi nequeas, possis tamen *Scipioni* praecipere et *Lælio*. Quid enim est jucundius *senectute stipata studiis* juventutis? Anne eas quidem vires *senectuti* relinquemus, ut adolescentulos *doceat*, instituat, ad omne officii munus instruat? quo quidem opere quid potest esse præclarius? Mihi vero Cn. et P. *Scipiones*, et avi tui duo, L. Æmilius et P. Africanus, *comitatu* nobilium juvenum fortunati videbantur. Nec ulli bonarum artium magistri non beati putandi, quamvis *consenuerint* vires atque defecerint. Etsi ista ipsa defectio virium adolescentiae vitiis efficitur sæpius, quam senectutis; libidinosa etenim et intemperans adolescentia effetum corpus tradit senectuti. Cyrus quidem, apud Xenophontem, eo sermone, quem moriens habuit, quum admodum senex esset, negat *se* unquam *sensisse* senectutem suam imbecilliorem factam, quam adolescentia fuisset. Ego L. Metellum memini puer—qui quum quadriennio post alterum consulatum pontifex maximus factus esset, viginti et duos annos *ei sacerdotio* præfuit —ita *bonis* esse *viribus* extremo tempore ætatis, ut adolescentiam non *requireret*.

6. Explain the grammatical construction of the words in Italics in extract (*c*).

7. Write short biographical notes of the person to whom this treatise is dedicated, and of the three speakers in the dialogue.

8. (*a*) Give (1) the *Declension;* (2) the *Meaning;* and (3) the *Genitive Sing.* and *Plur.* of:—Civitas, domus, opus, bos, mos, os (both), arcus, dies, rus, mus. (*b*) Write down the *Nom. Sing.* and *Plur.* of nive, viros, vi, mi, locis, robore, marem, dis, crure, deabus, nautis. (*c*) Decline:—Genus, filius, felix, aliquis, quivis.

9. (*a*) Write down the comparative and superlative of:—Acer, male, breviter, humilis, prope, juvenis. (*b*) Write down the adverbs, in all degrees, from:—fortis, facilis, tutus, andax, bonus, parvus. (*c*) Write down the first ten numerals in the Cardinal, Ordinal, and Distributive forms.

1. (*a*) Write down the *Perf.* and *Fut. Ind.* (1st sing.), the *Supine* and *Infinitive* of the following verbs used in "Cato Major," and give the prepositions in the compound forms:—Affero, ascendo, aspernor, cerno, cogo, condo, decedo, elicio, trado, succumbo.

11. Turn the following phrases and sentences into Latin:—(1) Cato was the first to do this. (2) The soldiers who were sent out to the war have all been killed to a man. (3) Cæsar led forth *his* forces to battle. (4) Scipio defeated Hannibal and *his* army in the battle of Zamea. [Note and translate the italicized pronouns in (3) and (4).] (5) The city of Rome was destroyed by fire when Nero was emperor. (6) Cicero was called the "Father of his country," but afterwards banished.

FRENCH.

TUESDAY, JUNE 10TH:—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M.A., B.C.L.

1. Translate into English:—

Après ces réflexions, j'en (*a*) faisais (*b*) d'autres toutes (*c*) contraires L'avertissement dont il s'agissait (*d*) me (*e*) paraissait délicat à donner: Je jugeais (*f*) qu'un auteur entêté de ses ouvrages pourrait le (*h*) recevoir mal; mais rejetant (*i*) cette pensée, je me représentais qu'il était impossible qu'il le prît (*j*) en mauvaise part après l'avoir exigé de moi d'une manière si pressante. Ajoutons à cela que je comptais bien de lui parler avec adresse et de lui faire avaler la pilule tout doucement. Enfin trouvant que je risquais davantage à garder le silence qu'à le rompre, je me déterminai à parler.

GIL BLAS—*Les homélies de l'archevêque de Grenade.*

2. (*a*) Parse *en.*

(*b*) Write in full all the simple tenses of *faisais.*

(*c*) What part of speech is *toutes?* Why is it so written? Give the rule.

(*d*) What kind of an expression is *dont il s'agissait?*

(*e*) Why is *me* placed before the verb? When there are two pronouns objects where do you place them, 1st, when they are of different persons and 2nd, when they are both of the 3rd person? And in what order? Give examples.

(*f*) Why has *jugeais* an *e*? Give the rule?

(*h*) Parse *le*.

(*i*) Has this verb *jetant* ever two *t's* in its conjugation? When? Illustrate your answer by two examples. Give an exception.

(*j*) To what mood and tense does *prît* belong? Write in full all the tenses of that mood.

3. Write in letters in French, 5678992. The 30th of May, 1884.

4. Write correctly the participles in the following phrases, and give the rules: Les hommes n'ont jamais *cueilli* le fruit du bonheur sur l'arbre de l'injustice. Rien ne peut suppléer la joie qu'ont *ôté* les remords. L'homme n'a guère de maux que ceux qu'il s'est *donné*. Sept villes se sont *disputé* l'honneur d'avoir vu naître Homère.

5. Translate into French:—

Bayard. I know it well: but true courage consists in resisting. If you know your fault, hasten to repair it. For myself, I die, and I find you much more to be pitied in your prosperity (*plural*) than I in my suffering. Although (*quand*) the emperor should not deceive you, although even he should give you his sister in marriage, and that he should divide France with you, he should not efface the stain which dishonores your life. The Constable of Bourbon a rebel! ah, what a shame! Listen to Bayard dying as he has lived, and not ceasing to tell the truth.

Fénelon.

GERMAN.

WEDNESDAY, JUNE 4TH:—AFTERNOON 2 TO 5.

Examiner,.....C. F. A. MARKGRAF, M.A.

1. Translate into English:—

(A) **Beiſpiel von Enthaltſamkeit.**

Alexander der Große kam auf ſeinem Zuge, die Welt zu erobern, durch eine lange Sandwüſte Aſiens, in der ſich nirgends Waſſer befand. Endlich hatte ein Soldat etwas aufgefunden und brachte es in ſeinem Helm dem Alexander. Da dieſer aber ſah, daß ſeine Soldaten eben ſo wie er vor Durſt lechzten, ſprach er: „Soll ich der Einzige ſein, der da trinkt?" und goß das Waſſer auf die Erde. Alle, voll Bewunderung über die Enthaltſamkeit des Königs, riefen: „Auf! führe uns fort! wir ſind nicht ermattet, wir ſind nicht durſtig; wir halten uns nicht für ſterblich, führt uns ein ſolcher König!"

Heinsius.

(B) Auf einer großen Weide gehen
Viel tausend Schafe silberweiß;
Wie wir sie heute wandeln sehen,
Sah sie der allerältste Greis.

Sie altern nie, und trinken Leben
Aus einem unerschöpften Born,
Ein Hirt ist ihnen zugegeben
Mit schön gebog'nem Silberhorn.

Er treibt sie aus zu goldnen Thoren,
Er überzählt sie jede Nacht
Und hat der Lämmer keins verloren,
So oft er auch den Weg vollbracht.

Ein treuer Hund hilft sie ihm leiten,
Ein muntrer Widder geht voran,
Die Heerde, kannst du sie mir deuten?
Und auch den Hirten zeig' mir an.

Schiller.

(C) Der dritte, ein Richter des Volkes, sprach: „Nie nahm ich Geschenke; nie bestand ich starr auf meinem Sinne; im Schwersten suchte ich mich jederzeit zuerst zu überwinden, darum hat mich Gott mit meinem Alter gesegnet." Da traten ihre Söhne und Enkel zu ihnen heran, küßten ihre Hände und kränzten sie mit Blumen. Und die Väter segneten sie und sprachen: „Wie eure Jugend, sei auch euer Alter! Eure Kinder seien euch, was ihr uns seid: auf unserm greisen Haar eine blühende Rosenkrone."

Das Alter ist eine schöne Krone; man findet sie aber nur auf dem Wege der Mäßigkeit, der Gerechtigkeit und Weisheit.

Herder, die Krone des Alters.

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2. (See Ext. A, B and C.) (*a*) Decline in the Singular:—der allerältste Greis; ein solcher König; eine blühende Rosenkrone; unserm greisen Haar. (*b*) Give the other cases Plural of:—goldenen Thoren; ihre Söhne und Enkel; eure Kinder.

3. (See Ext. A, B and C.) Parse the following verbs, and give the Present Infinitive, and any other irregular forms you know of beside the one here given, of each:—kam, befand, hatte aufgefunden, brachte, sah, sprach, trinkt, riefen, zugegeben, hat verloren, vollbracht, hilft, nahm, bestand, seid.

4. (*a*) Which words are declined like the definite article? (*b*) Mention the classes of nouns which are masculine, or feminine, or neuter. (*c*) What nouns taking the Plural termination „e" modify the radical vowel?

5. Give the meaning and derivation of the following words (with full explanation of the several forms) :—Röckchen, Dörflein, Gärtnerin, größter, schwärzeres, hölzern, Bächlein, Blättchen, näher, am besten, baumwollen, Äuglein, Flüßchen, stählernem, stärkster, Bäuerlein.

6. Translate :—his young nephew and niece—half a pound of tea—the 24th of March—is that something new?—what do you say?—we are reading—they like to learn—4 times 12 are 48—this is the year 1884 (All figures to be expressed in letters).

7. Write down the 3 persons Sing. of the Present Indicative of wollen, sollen, mögen, dürfen, müssen, können, wissen, werden.

8. Conjugate besuchen and ausgehen, giving the 1st Sing. and 2nd Plural of all the tenses of the Indicative.

9. Translate into English :—

Das Sprechen fremder Sprachen ist nicht nur nützlich, sondern auch sehr angenehm. Das Grün ist die Farbe der Hoffnung. Die Blüthen der Apfelbäume sind roth. Wer sind die Leute, welche jetzt bei Ihnen wohnen? Es sind alte Freunde, die vor einigen Tagen angekommen sind, und Geschäfte in der Stadt haben. Bitte, sagen Sie dem Knaben, die Briefe nach Hause zu tragen. Stellen Sie diese Bücher in den Bücherschrank, und legen Sie jene Papiere und Federn auf den Tisch. Hat euch der Kaufmann noch nicht die Waaren geschickt, welche Ihr diesen Vormittag in seinem Laden gekauft habt? Der Arzt verschrieb dem kranken Kinde eine stärkende Arzenei. Ich warte schon seit einer Stunde auf dich. Meine Eltern sind letzten Dienstag Abend um halb fünf Uhr abgereis't.

GEOMETRY.

THURSDAY, JUNE 5TH :—MORNING, 9 TO 12.

Examiners,..... { REV. PRINCIPAL LOBLEY, D.C.L. / G. H. CHANDLER, M.A.

1. From a given point draw a straight line equal to a given finite straight line.

Define a straight line, a triangle, an equilateral triangle, and a circle.

2. Draw a straight line at right angles to a given straight line of unlimited length from a given point without it.

If the straight line drawn from the vertex of a triangle at right angles to the base also bisects the base, the triangle is isosceles.

3. If a straight line falling upon two other straight lines makes the exterior angle equal to the interior and opposite angle upon the same side, or if it makes the two interior angles upon the same side of the line together equal to two right angles, these two straight lines are parallel.

If two straight lines AB and CD are parallel, and the angle which AB makes with BE is equal to the angle which CD makes with DF, BE is parallel to DF.

4. In any right angled triangle the square on the side subtending the right angle is equal to the squares on the sides containing the right angle.

Find a square equal to three given squares.

5. If a straight line be divided into any two parts the rectangle contained by the whole and one part is equal to the square on that part together with the rectangle contained by the two parts.

6. Divide a straight line into two parts such that the rectangle contained by the whole and one part may be equal to the square on the other part.

7. Describe a square equal to a given rectilineal figure.

Describe a square equal to the sum of two rectilineal figures.

8. Two straight lines in a circle which do not both pass through the centre do not bisect one another.

9. The angle in a semicircle is a right angle, the angle in a segment greater than a semicircle is less than a right angle, and the angle in a segment less than a semicircle is greater than a right angle.

The circles described on the sides of a triangle as diameters intersect in the sides or the sides produced.

10. In equal circles equal angles whether at the centres or the circumferences stand upon equal arcs.

The arcs intercepted between two parallel chords in a circle are equa to one another.

ALGEBRA.

WEDNESDAY, JUNE 11TH:—MORNING, 9 TO 12.

Examiners,..... { REV. PRINCIPAL LOBLEY, D.C.L.
G. H. CHANDLER, M.A.

1. If the minuend be a and the subtrahend $-b$ explain, without assuming any rule, why the difference wil. be $a + b$.

2. If $a = 1$, $b = 3$, $c = 5$, what will be the value of $\{a - (b - c)\}^2 + \{b - (c - a)\}^2 + \{c - (a - b)\}^2$ and of $\{a^2 - (b - c^2\} + \{b^2 - (c - a)^2\} + \{c^2 - (a - b)^2\}$

3. Resolve $6\,a^4\,x^2 + a^3\,x - a^2$, $x^2 + 7\,x - 8$, $x^2 - 3\,x + 2$, and $2\,x^2 - 3\,x - 2$ into elementary factors.

4. Show that $4\,a^2\,b^2 - (a^2 + b^2 - c^2)^2 = (a + b + c)\,(b + c - a)\,(c + a - b)\,(a + b - c)$.

5. What is the least common multiple of a^2, $2\,(ax - a^2)$ and $6\,(x^2 - a^2)$?

6. Reduce the fraction $\dfrac{x^3 - x^2 - 4\,x + 4}{3\,x^2 + 3\,x - 6}$ to its lowest terms.

7. Solve the equations

$$5\,(a + x) - 2\,x = 3\,(a - 5\,x),$$

$$\frac{x - 7}{x + 7} = \frac{2\,x - 15}{2\,x - 6} - \frac{1}{2\,(x + 7)}$$

8. Solve the simultaneous equations

$$\left.\begin{aligned} 2\,x + 3\,y + 4\,z &= 7, \\ x - 2\,y + z &= 5 \\ 3\,x + y - z &= 0 \end{aligned}\right\}$$

9. Three men, A, B, and C earn \$820 in 20 weeks; A earns each week \$10 more, but B \$5 less than C; what are the wages of each?

10. Prove that the difference of the squares of the first and third of any three consecutive integers is a multiple of the second.

TRIGONOMETRY.

WEDNESDAY, JUNE 11TH:—MORNING, 2 TO 5.

Examiners,..... { REV. PRINCIPAL LOBLEY, D.C.L. / G. H. CHANDLER, M.A.

1. What do you understand by the letter π as applied te an angle?

2. What are negative angles?

3. (*a*) What is the sine of an angle whose tangent is $\frac{3}{4}$? (*b*) What is the tangent of an angle whose sine is $\frac{3}{4}$? (*c*) What is the cosine of an angle whose tangent is $-\frac{3}{4}$?

4. Find the sine and cotangent of 60°. Also the cosine of 120°.

5. If tan A$=-1$, what is the size of the angle A?

6. Prove the formulæ

(*a*) $\sin^2 A \sec^2 A = \sec^2 A - 1$,

(*b*) $\cot^2 A - \cos^2 A = \cot^2 A \cos^2 A$,

(*c*) $\dfrac{\text{cosec } A}{\sec A} + \dfrac{\sec A}{\text{cosec } A} = \sec A \text{ cosec } A$.

7. If the sines and cosines of two angles were given, by what formulæ could you find the sines and cosines of the sum and difference of those angles? Prove one of the formulæ.

8. Given sin $20° = .342$, find sin $40°$ to 3 decimal places.

9. A pole is fixed on the top of a mound and the elevations of the top and bottom of the pole are $60°$ and $30°$. Show that the length of the pole is twice the height of the mound.

GEOMETRICAL AND FREEHAND DRAWING.

MONDAY, JUNE, 9th, 1884:—MORNING, 9 to 12.

Examiner,..... C. H. MCLEOD, Ma. E

1. Erect a perpendicular from the end of a line without producing the line.

2. Between two straight lines which do not meet there is a point $\frac{1}{2}$ an inch in perpendicular distance from one of the lines and $\frac{3}{4}$ of an inch from the other. Draw a line through the point, making equal angles with the given lines.

3. Two straight lines meet at an angle of $75°$; draw a circle of one inch radius to touch the two given lines.

4. Construct the curve, known as a cycloid, which is generated by a point in a circle of 2 in. diameter when this circle rolls along a straight line.

5. Make a freehand drawing of the object 2 before you:—

(*a*) A ring of square section.

(*b*) A cross stand on a pedestal of three steps.

6. Make a freehand drawing—without a model—of a cube when placed above the level and to the right of the eye. Two of the vertical sides of the cube are to be visible.

NOTE:—No mechanical measurement will be allowed in questions 5 and 6. In the Geometrical problems construction lines are to be dotted, and all results are to be obtained by direct construction, not by trial.

ENGLISH LANGUAGE.

[Peile, *Philology*; (Primer); Smith or Mason, *English Grammar*; *Trench Study of words*].

TUESDAY, JUNE 10TH:—AFTERNOON, 2 TO 5.

Examiners,..... { J. CLARK, MURRAY, LL.D. / REV. PROF. SCARTH, M.A. / CHAS. E. MOYSE, B.A. / REV. C. P. READ, B.A.

1. Explain the formation of the plural in such words as *foot* and *man*. Name three sounds to which certain languages object and the languages that object to them.

2. B, r, and n, have sometimes slipped into words: give six examples—(two of each letter). Arrange these languages in "types:" Sanskrit, Low German, Chinese, Turkish, Greek, French.

3. Explain the forms *amatur* and *bask:* also the difference between the subjective and the objective genitive. "Etymologically there is no difference between adverbs, prepositions, and conjunctions." Illustrate this statement.

4. Explain the terms *surd*, *sonant*, *nasal*, as applied to letters. Give one example of each. Classify the dentals and labials.

5. What kind of noun is each of these?—mob, running, ship, melancholy, iron, infancy, regiment.

6. How may gender be distinguished by suffix? Show how position indicates the case of a noun. For what does the apostrophe of the possessive case stand?

7. What does the word *article* mean? What are the various uses of *the* in English?

8. Classify the Pronouns (without examples). Show that a pronoun may refer (a) to a clause; (b) to a sentence.

9. Write the singular number of these tenses of the verb *beat*.

(*a*) The Present Indefinite of the Indicative Mood in the Active voice.

(*b*) The Past Perfect of the same mood in the same voice.

(*c*) The Negative-Interrogative form of the Future Imperfect of the Indicative Mood in the Passive voice.

(*d*) The same form of the Future Perfect of the same mood in the same voice.

(*e*) Is beat a strong or a weak verb? Why?

10. From what parts of speech are adverbs formed? Give two examples. What parts of speech do adverbs qualify? Give examples.

11. Explain the terms Simple, Complex and Compound, as applied to sentences. Write a Compound sentence.

12 Analyse :

The large white owl that with age is blind,
Is carried away in a gust of wind,
His wings could bear him not as fast
As he goeth now the lattice past—
He is borne on the winds ; the rains do follow.

13. What does Trench think concerning the origin of language?

14. What have you learnt from Trench regarding the following words :— alligator, bayonet, dunce, gene, idiot, mammet, Natal, plague, tinsel, volume.

15. What does Trench use the words post and stock to show? Use them as he does. Why does the language of Science differ from that of every-day life? Can you give two illustrations?

16. What does Trench think of the French Academy? Why does he condemn Phonetic spelling?

17. What traces of Danish speech still linger in English proper names?

ENGLISH LITERATURE.

(S. A. Brooke, *Primer;* Shakespeare, *Julius Cæsar;* Scott, *Lady of the Lake.*)

SATURDAY, JUNE 7TH :—MORNING, 9 TO 12.

Examiners, ... { J. CLARK MURRAY, LL.D. / REV. PROF. SCARTH, M.A. / CHAS. E. MOYSE, B.A. / REV. P. C. READ, M.A.

(*Number your answers carefully.*)

1. In some one of five columns, headed respectively (*a*) Poetry (including the Drama), (*b*) Philosophy and Science, (*c*) History, (*d*) Biography, (*e*) Translation, place each of the following authors, writing under his name the title of the work on account of which he stands where you have placed him :—

Francis Bacon, John Keats, Geoffrey Chaucer, Christopher Marlowe, Ben Jonson, John Milton, Alexander Pope, Adam Smith, John Wiclif, Alfred Tennyson, Nicholas Udall, Robert Burns, Thomas Babington Macaulay, Edward Gibbon, John Locke, William Shakespeare, William Dunbar, Layamon.

2. Notice the chief peculiarities of our literature during the Anglo-Saxon period, and during the period of the French Revolution.

3. What four great writers founded the modern novel in our Literature? Name a novel of each.

4. Mention six famous foreign writers, since the time of Chaucer, who have influenced English Literature? When was their influence felt?

5. Answer the following questions very briefly, but clearly:—

(*a*) Give one reason why Marullus blamed the citizens for rejoicing over Cæsar's return. (*b*) What proof does Cassius give Brutus that they can endure the winter's cold as well as Cæsar? (*c*) Why does Cæsar think Cassius dangerous? (*d*) From what ailment did Cæsar suffer? (*e*) When did he exhibit it? (*f*) What contrivance did Cassius adopt to incite Brutus to conspiracy? (*g*) What portents, exhibited by a common slave and a lion, does Casca mention? (*h*) Why does Brutus object to the conspirators taking an oath? (*i*) Why does Metellus Cimber wish Cicero to be included among the conspirators? (*j*) Why does Brutus wish Mark Antony to be spared? (*k*) Who was the father of Brutus' wife? (*l*) What reason for his remaining in his house did the augurers give Cæsar? (*m*) What dream had Calpurnia? (*n*) How was it interpreted? (*o*) By whom? (*p*) What did Brutus tell the conspirators to do directly after Cæsar's death? (*q*) What does Mark Antony wish when he first sees Cæsar's corpse? (*r*) What does he prophesy over Cæsar's wounds? (*s*) What did Cæsar give by will to the Roman people? (*t*) How did Brutus "wrong" Cassius? (*u*) Of what does Brutus accuse Cassius in return? (*v*) Why does Brutus wish to go on to Philippi at once? (*w*) Why does Cassius wish to delay? (*x*) Where is Philippi? (*y*) What do you gather from the play as to the incidents of the battle? (*z*) How often did the ghost of Cæsar appear to Brutus?

6. Opposite each of these words give its Shakespearian meaning:—moe, smatch, success, ensign, practice, censure, apprehensive, fond, addressed, present, physical, cautelous, favour.

7. Give the titles of the Cantos of The Lady of the Lake.

8. What persons take a prominent part in the Lady of the Lake? Say very briefly who or what each of them is? Can you quote ten consecutive lines from the poem?

9. Explain these words and phrases: woe *worth* the day; A Nymph, a Naiad or a Grace; God wot; pibroch; midnight *orisons; silvan* sport; strathspey; Holy-Rood; guerdon; claymore; slogan; *glozing* words; brae; minion; *rowan* wild; cabala; scaur; martial *coil;* roaring *linn.*

10. Take any Canto of the Lady of the Lake, except the first and the last, and narrate its outline.

HISTORY.

(*Primers of Greece and Rome and Collier's Great Events.*)

FRIDAY, JUNE 6TH:— AFTERNOON, 2 TO 5.

Examiners,..... { J. CLARK MURRAY, LL.D.
REV. PROF. SCARTH, M.A.
CHAS. E. MOYSE, B.A.
REV. P. C. READ, M.A.

1. What is understood by the term *Greece* in an historical sense?

2. Mention one important fact regarding each of these men and these places:—Themistokles, Aristides, Leonidas, Brasidas, Alkibiades, Perikles, Kimon: Troy, Delphi, Olympia, Lade, Syracuse, Ægospotami, Leuktra, Chæronea, Kynoskephalæ.

3. Contrast Sparta and Athens.

4. Give an outline of the Second Punic War.

5. Who composed the First and the Second Triumvirates? Who was the first Emperor of Rome? Who was the last?

6. What changes did Diocletian and Constantine make in the Empire?

7. Name some important event in connection with each of the following:—Frederick the Great, Mahomet, Les Gueux, Rienzi, Gustavus Adolphus, Coligny, Savonarola, Peter the Great.

8. What is meant by the Romano-Germanic Empire? When did it begin?

9. Sketch the career of the Moslems in Spain.

10. How many Crusades were there? Describe the Crusade in which Venice took a leading part.

11. What caused the decay of Chivalry?

12. Give an outline of the great French Revolution.

GEOGRAPHY.

FRIDAY, JUNE 6TH:—MORRNING, 9 TO 12.

Examiners, ... { J. CLARK MURRAY, LL.D. / REV. PROF. SCARTH, M.A. / CHAS. E. MOYSE, B.A. / REV. P. C. READ, M.A.

1. Explain the terms:—estuary, wash, bore, peak, dune, polder, isothermal lines, ecliptic, pole, zone.

2. What are the special products of Brazil, the Azores, the Straits Settlements, Borneo, Newfoundland, Corea?

3. Over what points would a bird pass, flying direct from London to Benares?

4. Describe volcanic action, giving instances of some of its causes and effects.

5. Mention all British possessions in the Southern Hemisphere, with a short description of each.

6. Where are Leipsic, Timbuctoo, Mount Elba, Durban, Manilla, Sennaar Anticosti, Yenesei, Tokio, Akaba? For what are they known?

7. What position does the earth hold in the solar system, and with what results?

8. Give the great divisions of British North America, with their approximate areas, and their special products.

9. Where are the Straits of:—Northumberland, Bab-el Mandeb, Palk, Pentland Firth, Bonifacio?

10. What effects have *constant* winds upon the earth's surface?

11. Describe the physical features of British Columbia.

12. Under what governments are:—Jersey, Luzon, Tahiti, Java, Palestine Hayti, Trinidad, Nova Zembla

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BOTANY.

THURSDAY, JUNE 12, 1884:—MORNING, 9 TO 12.

Examiner, ...D. P. PENHALLOW, B.Sc.

1. Describe the different parts of a flower, and show which are the most important.

2. What is the fruit of a plant and its function? Give examples.

3. Describe the leaf, some of its principal forms and its function.

4. Explain how to distinguish an Exogen from an Endogen.

5. Describe the root and some of its principal modifications.

6. What are Stolons, Offsets, Runners? Give examples.

7. What are Biennials, Annuals, Perennials? Give examples.

8. Describe the seed and its various parts, state where it originates and what its function is.

9. What are the distinctions by which Cryptogams are separated from Phenogams?

* 10. Describe the plant given, and state its correct position in classification.

* The examiner will please supply the students with any common flower.

ELEMENTARY CHEMISTRY.

THURSDAY, JUNE 5TH:—AFTERNOON, 2 TO 5.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. Give fully the properties of Chlorine gas.

2. What is *Aqua regia*, and upon what does its power of dissolving gold depend?

3. How may it be shown experimentally that 16 grammes of Oxygen combine with 2 grammes of Hydrogen to form 18 grammes of Water?

4. Distinguish between the different allotropic forms of Sulphur. State also how Roll Sulphur and Flowers of Sulphur are prepared.

5. How is Orthophosphoric Acid prepared? Give its formula. Why is it called a tribasic Acid?

6. Describe the preparation and properties of Carbonic Oxide.

7. Explain each of the following terms briefly: Water of Crystallization, Dimorphism, Mother Liquor, Anhydride, Diffusion.

8. On what grounds is air regarded as a mixture rather than a chemical compound?

9. Name the substances indicated by the following formulæ. HBr, H_3P, N_2O, $NaNO_3$, $NaHSO_4$, KHO, SiO_2, C_2H_4.

10. How is Marsh Gas prepared? Give its formula and properties.

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